EDUCATORS' AND CAREGIVERS' PERCEPTIONS ON THE IMPLEMENTATION OF SOCIAL NARRATIVES WITH INDIVIDUALS WITH AUTISM SPECTRUM DISORDER

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EDUCATORS' AND CAREGIVERS' PERCEPTIONS ON THE IMPLEMENTATION OF SOCIAL NARRATIVES WITH INDIVIDUALS WITH AUTISM SPECTRUM DISORDER

Social narratives are considered by the National Professional Development Center on Autism Spectrum Disorders (NPDC) to be effective in reducing challenging behaviors, improving expected behaviors, and preparing for change. This study is addressing the gap in literature about educators' and caregivers' perceptions of the implementation of and the differences in implementation of social narratives with individuals with Autism Spectrum Disorder (ASD). *Keywords:* autism, Social Stories™, social narratives, evidence-based practices, perceptions, educators, caregivers, special education, disability

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Table of Contents

List of Tables

List of Figures

Introduction/Science

Introduction/Purpose of Research

This study addresses the gap in literature about educators' and caregivers' perceptions of implementing social narratives and differences in implementing social narratives with individuals with Autism Spectrum Disorder (ASD). Social narratives are considered by the National Professional Development Center on Autism Spectrum Disorders (NPDC) (2016) and by much of the research literature to be effective in reducing challenging behaviors, improving expected behaviors, and preparing for change (Chan & O'Reilly, 2008; Delano & Snell, 2006; Barry & Burlew, 2004; Ivey, Heflin, & Alberto, 2004; Lorimer, Simpson, Myles, & Ganz, 2002; Kuttler, Myles, & Carson, 1998). Despite literature supporting the effectiveness of social narratives, differences in perceptions of implementation and differences in implementing social narratives have not been clearly articulated in research to date. Since the implementation of social narratives is integral to their use, this gap in the literature raises important questions about the effectiveness of social narratives.

The incidence of Autism Spectrum Disorder has increased rapidly and alarmingly over the past decade to 1 in 68 children. The total cost per year to care for children with ASD in the United States is estimated to range from $11.5 billion to $60.9 billion. This increase represents a significant economic burden in providing necessary care and supports (CDC, 2015). The growing number of individuals with autism spectrum disorder requires a growing number of necessary professionals and caregivers involved in the care and education of these individuals. The cost of behavioral interventions for individuals

with ASD, particularly children, is estimated to be $40,000 to $60,000 per child per year (CDC, 2015).

These interventions and services range from medical, therapies, behavioral interventions and strategies, social interventions and strategies, and educational supports in the form of special education services. Most of these interventions require techniques that help address behavioral, sensory, and social challenges. Caregivers and educators rely on such strategies and evidence-based practices to attempt to improve the behavior and skills of these individuals in a way that will allow them to benefit from their educational programming and to participate in their communities and daily activities.

To understand autism spectrum disorders more fully, it is useful to describe the disorder and stakeholders, and to explore some of the typical interventions and strategies that may allow educators, caregivers, and professionals to take on the challenges and reduce the barriers people with autism spectrum disorders face as they pursue meaningful and productive lives. One focal social intervention or strategy investigated within this research is the implementation of social narratives. Social narratives are considered to be effective in reducing challenging behaviors, improving expected behaviors, and preparing for change, based on current research (Chan & O'Reilly, 2008; Delano & Snell, 2006; Barry & Burlew, 2004; Ivey, Heflin, & Alberto, 2004; Lorimer, Simpson, Myles, & Ganz, 2002; Kuttler, Myles, & Carson, 1998).

Autism Spectrum Disorders. As indicated in the diagnostic criteria for autism spectrum disorder (ASD) in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013), individuals with autism spectrum disorder have deficits with social communication and social interaction. These deficits

affect their ability to interact with others in social situations and to recognize expectations of others in given contexts or interactions. For example, they may not possess the social communication skills to use eye contact to interpret the social meaning of a given social situation such as recognizing that someone looks bored with a conversation or that someone is visibly upset by a specific behavior. They may not perceive nonverbal communication such as a person's body language, gestures, or emotions. They often have difficulty understanding the expectations in relationships. They may lack the ability to adjust their own behavior in different social contexts due to difficulty discriminating differences and generalizing skills between contexts, such as how to talk to friends versus teachers when at school.

The DSM-5 diagnostic criteria for autism spectrum disorders also specify that individuals with autism often have repetitive behaviors and restricted interests (American Psychiatric Association, 2013). The presence of these behaviors impact interactions with others. The inflexibility of strictly maintained routines, rituals, and preferences results in difficulties adapting to change. Those changes can be simple changes in schedules or routes that most individuals would adapt fairly easily to such as a school snow day or delay in schedule.

Abnormal responsivity to sensory input further impacts behaviors in social environments and often can create difficulties in social interactions (American Psychiatric Association, 2013). For example, an individual who is sensitive to touch may have difficulty being touched by others or may have difficulty tolerating a crowded environment. Because of the prevalence of autism, these sensory, social, and behavioral

differences in not only directly affect individuals with autism, their families, and educators and staff supporting them, but also their communities and society as a whole.

Caregivers and Families. The impact of autism on our families, communities, and society is great. Social, communication, and behavior challenges can significantly impact an individual's ability to contribute to society. For example, if individuals are unable to communicate their needs and wants, they may resort to tantrums in order to obtain a desired object. Individuals with autism spectrum disorder may struggle to answer verbal questions due to a language delay. Behavioral rigidity and inflexibility may interfere with switching routines and activities. These challenges affect learning and participating in activities of daily living, work, and leisure. Inabilities adapting to change, inadequate social skills, and differences in sensory responses may affect relatedness to caregivers and family members. For instance, some individuals may scream or become self-injurious when overstimulated by too many social or sensory demands. These social and behavioral challenges can be addressed through the implementation of social narratives. Although social narratives are effective, there is limited knowledge about the differences in how educators and caregivers perceive the implementation and differ in the implementation of social narratives.

Statement of Problem

The gap in knowledge about differences in how educators and caregivers perceive the implementation of social narratives and in the implementation of social narratives is problematic, because of the increasing incidence of autism and the potential effect on individual, family members, communities, society. For individuals with autism to actively contribute to society, to pursue meaning in their daily occupation, to participate

and engage in an education, to pursue work, and to engage in community activities, they must be able to adjust their social behavior (Case-Smith & Arbesman, 2008).

Although evidence exists regarding the effectiveness of using social narratives in improving social behavior, there is little evidence about how educators and caregivers perceive the implementation of these narratives or how they differ in implementation. The ecological validity of social narrative research, or the extent to which the conclusions of this research can be generalized to the natural environments and contexts being studied, is of value. Because research on social narratives is quantitative, looking at effectiveness and outcomes, the research may not generalize well to the context in which individuals are experiencing the intervention. We lack applicable information and an understanding of the educators' and caregivers' perceptions of social narratives and how they implement them. Additional information is needed that can reveal the perceptions of educators and caregivers in the naturalistic settings of schools and homes, specifically on the differences in interventions within the context and environment of the individuals. Thus, the research question is, what are the differences in educators' and caregivers' perceptions of implementation and how do they differ in implementation of social narratives with individuals with Autism Spectrum Disorder?

Background

The National Professional Development Center on Autism Spectrum Disorder (NPDC). With the incidence of autism spectrum disorder on the rise, three universities pursued a collaborative effort to improve the process of identifying and promoting best practices for individuals with autism spectrum disorders. The University of North Carolina at Chapel Hill, University of Wisconsin at Madison, and University of

California-Davis formed The National Professional Development Center on Autism Spectrum Disorder (NPDC), which was funded by the Office of Special Education Programs in the US Department of Education (OSEP). This grant continued from 2007-2014 and provided the opportunity for state and national-level training and professional development on best practices in autism spectrum disorders. The identification of best practices in autism spectrum disorders has evolved over this time. The NPDC has included updated online modules to improve learning (2016).

The NPDC established criteria for practices to qualify as what they consider an evidence-based practice in autism spectrum disorders. The following are the criteria that were established: 1) the practices needed to have either two randomized or quasi-experimental design studies that were conducted by at least two different researchers/groups, 2) five single subject design studies considered to be "high quality" and that were conducted by three different researchers/groups with the cross-study totals of at least 20 participants, or 3) a combination of evidence that included one randomized or quasi-experimental group design study and three or more single subject design studies that were conducted by three or more different researchers/groups (NPDC, 2016).

According to the NPDC, it is important to consistently implement what they consider to be evidence-based practices in autism spectrum disorders across environments. By doing so, the NPDC believes individuals with autism spectrum disorder can more successfully discriminate, generalize, and differentiate the social expectations from one setting to another. Accordingly, it is helpful to communicate and share successes and challenges with families, caregivers, and/or any other treatment providers in order to pursue fidelity in implementation. To improve fidelity in

implementation of these practices, the NPDC developed an updated training extension online, the Autism Focused Intervention Resources and Modules (AFIRM) (2015).

Evidence-based practices. Within the currently accepted list of evidence-based practices in autism spectrum disorders, the practices included are also considered and often referred to as strategies or interventions by the NPDC (2016). These strategies and interventions are used to improve the previously identified behavioral, social, and sensory challenges. Some of the behavioral strategies or practices include antecedent-based intervention, discrete trial teaching, functional behavioral assessment, prompting, reinforcement, task analysis, and time delay (NPDC, 2016). Sensory-based strategies, such as exercise, have recently been included (NPDC, 2016). Most of the behavior strategies or practices are based in applied behavior analysis (ABA). Social strategies and interventions, and in particular social narratives, the focus of this research, include peer-mediated instruction and intervention, social narratives, structured play groups, and video modeling

Social narratives. One commonly used evidence-based practice is known as social narratives. Social narratives is a generic term used to describe a variety of stories that are written for individuals with autism to clarify social and behavioral expectations. When implemented according to the guidelines developed by the NPDC, social narratives are considered to be an evidence-based practice in autism (NPDC, 2016; AFIRM, 2015). According to the NPDC the steps of implementation for social narratives is the prescribed process of identifying a targeted behavior, writing and implementing a narrative, collecting data, and modifying interventions as needed (NPDC, 2016). There is no known correlation between a particular way of implementing social narratives and behavioral

outcomes, however some studies reviewed suggest that if social narratives are not implemented correctly, the strategy is not as effective (**S**ansosti & Powell-Smith, 2006).

Social narratives evolved from the work of Gray (2004), who pioneered Social Stories™. Social narratives are used to teach expected social behaviors regularly expected in play, work, school, and home environments. Narratives are used to increase expected behaviors and to decrease unexpected behaviors that may be problematic or socially unacceptable, such as talking out in class. Narratives are used to prepare for social situations and changes such as expectations at a class party. When implementing narratives, individual needs must be considered. The use of visuals within narratives is ideal because individuals with ASD are visual learners and are thought to interpret information in literal and concrete ways. Social narratives should be carefully written and chosen to avoid any figurative or abstract language that may be confusing to an individual with ASD (AFIRM, 2015). According to Gray, (2014), an individual's ability to comprehend language, particularly the intended meaning that is used in visual supports and narratives, is a prerequisite to successful implementation and outcomes.

Social narratives can help individuals prepare for changes in schedule, including holidays, school breaks, and special events. Proactively preparing individuals for changes in schedule is considered an antecedent-based intervention, which is another practice considered by the NPDC to be evidence-based (NPDC, 2016). According to the NPDC, it is helpful to review narratives and prepare for those changes prior to the events. There are a variety of examples of visuals and narratives online that can be used when preparing for changes in the home or at school that educators and caregivers can access (NPDC, 2016).

Social narratives include Social Stories™, cartooning, Comic Strip Conversations™, and Power Cards. These are often used in combination with other social strategies, such as: social scripts, social thinking®, video modeling, visual supports, and social skills groups.

Social Stories™. Gray introduced Social Stories™ in 1993, as an intervention used to teach children with autism spectrum disorders how to respond as expected in social situations (Gray, 2004). Gray's Social Stories™ are short stories that describe social situations, specifically, by explaining the context of the situation, changes that may occur, social and behavioral expectations, and suggested responses. Social Stories™ provide individuals with cues for perspective taking so that they can identify, understand, and choose socially expected responses, such as raising your hand to ask a question in class (Gray, 2004).

What sets a Social Story™ apart from all social narratives is Gray's specific formula, known as Social Stories™ 10.2. According to Gray (2014), the goal of these stories is to "share accurate information using a content, format, and voice that is descriptive, meaningful, and physically, socially, and emotionally safe for the audience" (p. 1). Social Stories™ are to consist of a title, introduction, body, and a conclusion. Social Stories™ should include an individual's ability and should include his or her specific interests, whenever possible. Social Stories™ are to be positive and clear to the reader (Gray, 2014). When implementing Social Stories™, caregivers and educators must be aware of the types of sentences used and these should include descriptive, directive, perspective, affirmative, control, coaching, and cooperative sentences. Through the use of

these sentences, individuals are given information to interpret social cues, improve perspective-taking, and give acceptable responses (Gray, 2010).

***Comic strip conversations*.** Comic strip conversations, also developed by Gray (1994), are modified Social Stories™ that use symbols and figures to illustrate the importance of perspective-taking within a context. For example, comic strip characters representing the individual with autism, and his or her classmates, could be drawn to illustrate the importance of not talking out in class (context). These character drawings can be combined with written narratives to explain the perspective (thoughts and verbal responses) that others may have when a student talks out in class. These can be shared as social situations occur and are a powerful tool for processing social situations.

***Power cards*.** Power cards can be thought of as a quick summary of social narratives (Gagnon, 2001). Power cards are social cue cards that use an individual's special interests. They often include a character, object, or person of interest to the individual reading the story. The use of special interests provides additional motivation to the individual when learning expected social behaviors (Gagnon, 2001). For example, if an individual is interested in the Titanic, a power card may be created to remind them of social icebergs or faux pas to avoid.

Social Strategies. According to NPDC (2016), social narratives can be used in combination with other effective social strategies. Examples of these include: social scripts, social thinking®, video modeling, visual supports, and social skills groups. Combining social narratives and other social, behavioral, or sensory strategies, allows for individualized interventions to improve social and behavioral functioning (NPDC, 2016). These social strategies are described below.

Social Scripts. Social scripts are summaries of social narratives that serve as short, social reminders. These scripts are typically based on a social narrative's main idea. Social scripts serve as simple and memorable phrases that an individual can repeat and learn. They are similar to the process of self-talking that people use to remind themselves of expectations, but they are presented in a visual format. At times, scripts may only be the visual reminder from a narrative or story; at other times, scripts are one or two lines of text.

Social thinking®. Social thinking®, a social skills strategy developed by Winner (2012), is another approach used when teaching individuals how to respond as expected in given situations. Social thinking® teaches individuals about the power of the thoughts that other people have and how these affect interactions. Being aware and thinking about how other people think affects their behavior and, subsequently, affects the responses, emotions, and relationships between them (Winner, 2012). Language and principles of Social Thinking® can be used within or in addition to social narratives.

Video modeling. Video modeling is the use of video and audio visual technology to teach a targeted behavior or skill. Video modeling focuses on capturing expected behaviors and reviewing the expected behaviors in order to teach expectations. Video modeling is used in combination with social narratives. At times, social narratives are written and implemented through the use of video modeling by adding a verbal or visual script to the video clips used (NPDC, 2016; Franzone & Collet-Klingenberg, 2008).

Visual supports. Visual supports are considered by the NPDC (2016) to be an evidence-based practice, when implemented according to the established NPDC guidelines. Visual supports are typically incorporated into social narratives. They can

also be used in combination with narratives to teach an expected behavior. A simple visual support can assist individuals in remembering the expected behavior and in understanding what is expected in a given situation (Hume, 2008). Visual supports allow individuals to comprehend a concrete expectation and supports difficulties in auditory processing, speech development, and language comprehension (NPDC, 2016). An example of a visual support, is the Incredible 5-Point Scale (see Figure 1 below) (Dunn-Buron, 2015). By self-rating emotions or anxiety on a 5-Point Scale, individuals can then identify, communicate, and self-manage their emotional levels.

Figure 1

Literature Review

Rationale

While there is considerable literature that examines the effectiveness of social narratives, very few examine educators' and caregivers' perceptions of the implementation of social narratives or the differences in implementation of social narratives. It is noteworthy that implementation styles varied between studies and these differences will be discussed further below. This is of interest because some of these implementation differences were clearly articulated and may have affected the level of effectiveness of social narratives in improving specific social behaviors.

Social Narrative Literature Review

Effectiveness. Based on current research literature, social narratives are considered an effective tool in improving specific social behaviors. Researchers, such as Chan & O'Reilly (2008), Delano & Snell (2006), Barry & Burlew (2004), Ivey, Heflin, & Alberto (2004), Lorimer, Simpson, Myles, & Ganz (2002), Kuttler, and Myles, & Carson (1998) concluded that Social Stories™ were effective in reducing challenging behaviors, improving expected behaviors, and preparing for change. Differences in implementation were noted, for example the effectiveness of the stories decreased when the stories were removed, in an ABAB design (Lorimer et al, 2002). Researchers identified that clear description of expectations of behavior, repetition, prompting and feedback are necessary components of successful implementation (Barry & Burlew, 2004). Effectiveness studies have been replicated in other countries (Hung & Smith, 2011; Whitehead, 2007). Within these studies, different styles of implementation of social narratives by educators and caregivers were noted, despite clear guidelines for implementation.

Studies by Delano & Snell (2008), Ozdemir (2008), and Schneider & Goldstein (2010) supported the effectiveness of Social Stories™, with Schneider & Goldstein (2010) concluding that combining narratives and visual schedules when implementing, resulted in the best improvement of classroom behaviors; however, Schneider & Goldstein (2010) point out that "among the empirical studies, the implementation of Social Stories differs greatly" (p. 150). They further argue that the designs of previous studies are "highly variable" and relatively few used Social Stories™ as the only intervention (p. 150). Although the studies indicate that Social Stories™ are successful intervention, each study has recognizable weaknesses in design and implementation of interventions. Schneider & Goldstein (2010) conclude that it is uncertain if the results of each study were due to a combination of interventions (i.e. visuals and reinforcement) or solely due to the implementation of Social Stories™. Previous studies completed on social narrative interventions have been quantitative research studies, examining the effectiveness of social narratives, while very few have examined, qualitatively, the significance of educators' and caregivers' perceptions of social narrative or differences in how they implement social narratives.

Steps of Implementation. Based on a comprehensive review of research literature, The National Professional Development Center on Autism Spectrum Disorder (NPDC, 2016) has identified the steps of implementation for social narratives to be considered an evidence-based practice, including planning for, writing and designing, using, and monitoring outcomes. The first step is to plan for implementation, by identifying the social situation. In an educational or clinical setting, the author has to consider the individual's educational goals and behavioral needs. In the home, caregivers

must similarly choose the skills or situations that are the highest priority. This requires the author to select a social behavior that needs to either be changed or addressed. By defining the target behavior or skill, it is easier to teach and learn the skill. After the narrative is designed and written for the individual, it is introduced by reviewing concepts and reading the narrative to or with the individual. Once an individual participates in a social situation in which the behavior or issue is addressed, the educator or caregiver implementing a narrative should collect data to assess what is happening and whether the narrative was successfully implemented. The final step of implementation is to monitor data and determine the plan for future implementation, based on an individual's progress (AFIRM, 2015).

Style of Implementation. According to Gray (2014) and the NPDC (2016), based on current literature review, narratives should be introduced positively and proactively, with the intent of teaching and shaping behaviors. Narratives should not be introduced and used as a punishment for a behavior. The frequency with which a narrative should be used and reviewed is individualized. According to Gray (2014), some individuals require more frequent review of the story to create a personal script, similar to self-talking, while others may only need to read the narrative a few times. Some individuals may find narratives calming and wish to refer to them when feeling anxious or upset (Gray, 2014).

According to Gray (2014), it is good to develop a plan for implementing narratives, but to be flexible. Careful observation of an individual's response to the narrative can often indicate the success of the narrative in preparing and teaching. With the success of a narrative, there are related issues and needs that may arise. As additional narratives are developed, it is a good idea to build upon previous narratives to further

learning. Gray recommends keeping narratives in an accessible place for ease of implementation and use (Gray, 2014).

Differences in Implementation. The implementation characteristics of social narratives identified in the literature vary greatly between studies. The context and environment of implementation is inconsistent across individual studies. Smith (2011) reviewed concerns about the implementation of social narratives. For example, the choice of whether or not to implement the strategy, despite recognizing the evidence of effectiveness. Some of the trained educators in this study chose not to implement social narratives due to factors, such as: time constraints, perceived lack of skills, and concerns about how to implement stories. When reviewing the implementation strategies of educators and caregivers in this study, there were differences in the styles of writing and designing narratives and in the context of using narrative. Some presented narratives using technology and others presented using a printed copy on the student's desk. The frequency of implementation also was reported to vary and to have an effect on success (Smith, 2011).

Social narratives are used in different ways with a variety of behaviors and ability levels. Because most individuals with autism spectrum disorder are male, it is important to realize one significant difference is that most social narrative research has focused on implementation with males. One example of research on implementation with females is Karayazi, Evans, & Filer (2014). These researchers experienced success in a single-case study design on the use of social narratives with one high-school aged female diagnosed with autism spectrum disorder to improve pro-social behaviors.

Implementation: formatting style & presentation differences. Different styles of implementation identified by Schneider & Goldstein (2010) in previous research included style of illustrations, number of additional visual reminders, and mode of delivery. Some used technology, multimedia, and even music to implement stories. Different settings of presentation were also identified. In some situations, narratives were read to students and, in others, the students read the narratives to themselves. Whether narratives were presented in individualized versus group settings or in quiet versus chaotic settings was not clearly articulated.

Schneider & Goldstein (2010) recognized that differences in implementation existed between studies. They proposed that, in terms of changing one's behavior, one cannot separate the content or context of the implementation of social narratives. For example, narratives are often used in combination with other strategies and are presented in different formats and settings. For the purpose of establishing whether narratives are effective when used alone and are implemented consistently, Schneider & Goldstein (2010) studied the effectiveness of social narratives presented consistently and in a specified format. The narratives were presented by educators according to the following criteria: each narrative was printed on 5.5- by 8.5-inch white paper in a consistent font with consistent line drawing symbols, laminated, and bound on the left side. For two students, the narratives were read in a quiet corner of a classroom a few minutes prior to the activity in which the behavior was being targeted. For two other students, the narratives were read outside in the hallway. The study found improvements in social behavior for all students in the study, with additional visual supports being used with one student (Schneider & Goldstein, 2010).

As previously stated, social narratives are not always implemented in the same format. Xin & Sutman (2011) offered new insight into the combined strategy of using social narratives with technology/computer-assisted instruction and video modeling, through use of an interactive board. They suggest that this combination facilitated student learning of expected skills while reinforcing students' behavior. The technology allowed participants to observe themselves in the scenarios. Both subjects showed improvement in their targeted communication and social behavior skills in the classroom.

Implementation: caregiver consistency. **S**ansosti & Powell-Smith (2006) investigated the effects of social narratives, particularly Social Stories™. The results replicated previous research, indicating effective outcomes in using social narratives to improve social behaviors in children with autism. The study provided insight and guidance on how differences in implementation can affect outcomes. For example, one individual demonstrated a lower response to the narrative intervention than the other individuals who were studied. According to Sansosti & Powell-Smith (2006), this individual's caregiver did not report on implementation as expected and may not have implemented the narrative strategy with fidelity. Whether differences in consistency of implementation can impact the effectiveness of social narratives is not clearly researched in literature.

Implementation: caregiver perception. A study of particular interest to this research was completed by Dodd, Hupp, Jewell, & Krohn (2007). Though the purpose of their research was to determine the effectiveness of social narrative interventions with two school-aged children, the researchers included in their report that caregivers had a positive perception of this intervention. Caregivers shared that their children indicated

that they "somewhat liked" reading the narratives and learning something new. Caregivers shared their perception that children were responsive to implementation of social narratives. Caregivers reported that the children were willing to read the stories with them. Caregivers responded that they planned to continue implementing social narratives in the future because of their perception of a positive experience and outcomes.

Implementation: duration. The implementation duration of social narratives may affect outcomes. One example of this is Samuels & Stansfield (2011) who found that, with adults, behaviors do return to baseline when intervention stops. They suspected that behaviors may be more long-term at this stage of life and that successful intervention may require a longer duration of implementation, in order to be successful.

Implementation: perception. One of the studies reviewed included additional qualitative research regarding educators' and caregivers' perceptions of the effectiveness of social narratives. In addition to pursuing quantitative data on effectiveness, Smith (2001) surveyed educators' and caregivers' perception of the effectiveness of social narratives. Social narratives were typically rated above the mid-point of a 10-point scale. Most of the individuals surveyed reported that they "found the approach enjoyable, practical and effective" (Smith, 2001, p. 342). Those surveyed shared that they perceived them as effective and success was reported.

Gap in the Literature

Case-Smith and Arbesman (2008) caution that quantitative research does not generalize well to natural environments or the context in which individuals are experiencing the intervention. Because most of the research on social narratives is quantitative and looks at the outcomes, we lack information and an understanding of the

educators' and caregivers' perceptions of social narratives and how they implement them. Additional information is needed that can reveal the perceptions of educators and caregivers in the naturalistic settings of schools and homes, specifically on the differences in interventions within the context and environment of the individuals.

A client-centered and family-centered approach would require that implementation of this strategy occurs within the context of what is important and meaningful to the individual and family, would target the interests and experiences of the individual, and that would include the individual and family in the process (AOTA, 2014). It would consider the social, cognitive, and cultural dynamics within which implementation is taking place. It would consider the environments within which the intervention occurs (AOTA, 2014) and recognize the importance of prioritizing behaviors or outcomes that are meaningful to individuals and their families.

Although social narratives are considered to be effective, it is essential to value and respect the perceptions and input of those implementing narratives, specifically caregivers and educators. Additionally, differences in the implementation of social narratives can influence outcomes and effectiveness (Schneider & Goldstein, 2010; Smith 2011). This research would benefit the field of occupational therapy as descriptive research provides evidence that supports client-centered approaches (Tomlin & Smith, 2015; AOTA, 2014).

Summary of Literature Review

Upon review of available research, it became apparent that there is a gap in literature describing educators' and caregivers' perceptions of social narratives. Additionally, there is little in the literature that describes fidelity of or differences in

implementation, such as: environment, context, format of presentation, approach of presentation, frequency of implementation, duration of implementation, consistency of use, and compliance with implementation. Differences in perceptions and implementation may have unintended or unknown effects on social narrative outcomes.

Research Questions

According to research, if social narratives are implemented properly, they can make a significant impact on behavior. However, research suggests that educators and caregivers do not understand the process of implementation as clearly as the process or criteria of writing social narratives. Inconsistencies within the process of implementation may affect outcomes. Consequently, the purpose of this research is to answer the following questions:

1. What are the differences in educators' and caregivers' perceptions of social narrative implementation?
2. How do educators and caregivers differ in implementation of social narratives with individuals with Autism Spectrum Disorder?

Methodology

Research Design

This is descriptive research. A self-administered online survey, consisting of open-ended and closed-ended questions, was used to collect data. A convenience sample of educators and caregivers of individuals with autism within Clark County, Indiana. Because the sample is expected to represent the population, normative data will reveal differences between educators and caregivers. Sample parametric statistical analysis will allow researchers to draw inferences about differences in the population, based on the sample surveyed.

Research Participants

This research used an online survey called Survey Monkey to contact educators and caregivers of individuals identified by an educational diagnosis of autism spectrum disorder using DSM-IV-TR or DSM-5 Criteria according to Indiana State Law (IDOE, 2014). At the time of the survey, the number of individuals diagnosed with autism spectrum disorder in Clark County, Indiana was 236. Educators were defined in this study as Special Education and/or General Education Teachers, School Psychologists, Special Education Supervisors or Directors, Occupational Therapists, and Speech-Language Pathologists who worked with individuals with autism spectrum disorder. Caregivers were defined as parents, guardians, or primary caretakers of individuals with autism spectrum disorder in Clark County, Indiana that were currently email-subscribers to receive regular information regarding autism spectrum disorders. The field of responders was approximately 450. An online survey was chosen because of the ease of contacting educators and caregivers via email contacts and email lists.

Inclusion Criteria/Exclusion Criteria

Inclusion criteria of this study were educators or caregivers who currently provided care for individuals with an educational diagnosis of Autism Spectrum Disorder, according to Article 7 (IDOE, 2014) in Clark County, Indiana. This study included educators who currently worked with or cared for individuals with an educational diagnosis of Autism Spectrum Disorder, according to Article 7 (IDOE, 2014) in Clark County, Indiana. Individuals who did not care for or provide educational support to individuals with Autism Spectrum Disorder were excluded from this study. IRB approval was received prior to the completion and distribution of the research survey.

Procedure

The survey was sent to educators and caregivers who currently worked with or cared for individuals with an educational diagnosis of Autism Spectrum Disorder, according to Article 7 (IDOE, 2014) in Clark County, Indiana. Reminders were sent weekly for three weeks following the initial contact, for a total of 4 email contacts regarding the survey.

Measurements/Instruments

A self-administered online survey, consisting of open-ended and closed-ended questions was used to gain data. An online survey was chosen with the intent to reduce interviewer bias. Survey question answers included a set of answers and an additional field “other” that could be chosen by respondents such as “What is your role in the life of an individual with an autism spectrum disorder?” If the respondent did not identify with any role listed, “other” was able to be selected, giving the respondent the option to provide an open-ended response. Provided answer set formats were varied, using bipolar

ordinal and nominal scales. Ordinal scale answer sets were carefully selected using a natural metric. Nominal answer sets were multiple choice, with a check-all-that-apply format to reduce respondent burden. The length of the survey and survey introduction was monitored to encourage respondents to provide responses for all fifteen questions.

Instrumentation Reliability/Validity

The survey measured the correlation and differences between caregivers and educators regarding their experiences and perceptions in the implementation of social narratives. Because this was a custom survey, created for the sample and population being measured, and reviewed by experts in the field, it has face construct validity and, thus, measures what it is intended to measure. Through the process of collecting and analyzing data, the survey reveals the relationships and differences between role and perception and relationships and differences between role and implementation.

The external validity of this study is the extent to which the results of this survey can be generalized from the sample surveyed to the population represented. The sample size surveyed should be an accurate representation of the population based on the fact that a 25% response rate was achieved of approximately 465 surveyed with 118 responses. Of 118 responses, 111 completed most questions. Seven respondents skipped question 2, “What types of social narratives do you use?” On the final question, 16 respondents skipped the opportunity to indicate any other social strategies used with social narratives, thus 102 respondents completed the full survey. Eleven respondents included additional comments and feedback at the end of the survey. This rate of response was thought to be representative of educators and caregivers in southern Indiana. The number of students enrolled in Indiana’s public and non-public schools

during the 2015-2016 school year was approximately 15 in 1,000, which correlated with the national incidence rate of 1 in 68 (CDC, 2015; Pratt, 2016).

Because this survey measured qualitative responses, reliability, or consistency was not readily established. Reviewing responses of each group, statistically, determined whether responses are consistent or variant within and between groups. Peer review and statistical analysis of the survey responses further established validity and reliability.

Timeline

The survey was sent near the beginning of the Fourth Quarter of the 2015-2016 school year in Clark County, on April 18th, 2016, following a two-week Spring Break and Intercession. Follow-up emails to remind respondents to participate were sent on April 25th, May 2nd, and May 9th, approximately one month prior to the end of the 2015-2016 school year and two weeks prior to the end of the Spring Semester. Data was reviewed during Summer Break 2016. This timeline was chosen to maximize the number of responses.

Results

The survey was sent to 465 participants, 180 people identified as caregivers and 285 people identified as educators. It is not possible to know the exact number who received the survey because of the nature of an email survey. Respondents may forward or share the survey with other potential respondents. The confidentiality of the data collection procedure did not allow for email addresses to be tracked when reviewing results. Some parents and families may share single email accounts and others have multiple accounts. Educators may have shared email surveys within their educational teams and to other professionals in their buildings, such as their building administrators or support staff. For these reasons, demographic data was not collected. Of the 465 surveys counted as sent, 118 were submitted, which was approximately a 25% response rate.

Of the 118 survey respondents, 25 identified themselves as caregivers, 97 identified themselves as educators, 4 identified themselves as both educators and caregivers. Respondents were able to choose to identify themselves as having multiple roles, such as parent, guardian, and caregiver. For the purpose of this research, parent, guardian, caregiver, and family member were included in the caregiver category and special education teacher, regular education teacher, school psychologist, occupational therapist, speech therapist, school psychologist, and counselor were included in the category educator. The breakdown of each group was broken down into percentages and number of respondents below, in *Table 1*.

Table 1

Respondents	%	N
CAREGIVERS		
Parent	18.64%	22
Guardian	3.39%	4
Caregiver	2.54%	3
Family Member:	4.24%	5
EDUCATORS		
Educator/Teacher Regular Education	8.47%	10
Educator/Teacher Special Education	61.86%	73
Occupational Therapist	2.54%	3
Speech Therapist	8.47%	10
School Psychologist	2.54%	3
Educational Administrator/Supervisor	5.93%	7
Counselor	0.85%	1
Other (please specify) “God Mother”	0.85%	1
Total Respondents: 118		

Per-Question Analysis

Figure 2.1

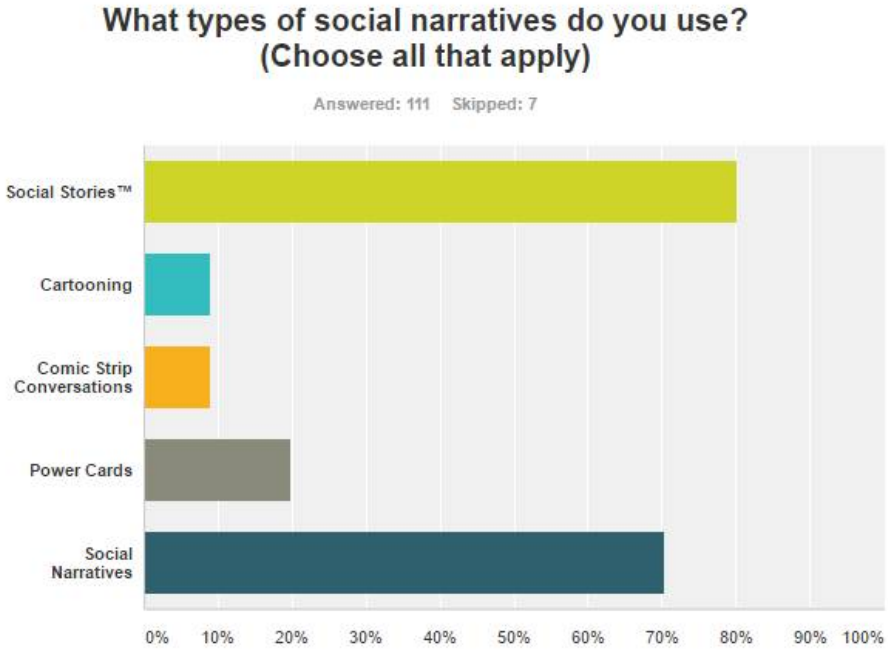

Table 2.1

Answer Choices	Responses	
Social Stories™	80.18%	89
Cartooning	9.01%	10
Comic Strip Conversations	9.01%	10
Power Cards	19.82%	22
Social Narratives	70.27%	78
Total Respondents: 111		

Type of Narratives Used (Combined). Educators and caregivers, combined, consistently responded that the type of social narrative that they use are social stories™ and social narratives (see *Figure 2.1* above). They chose social stories as the type they use 80.18% most and social narratives as the second choice, with 70.27% of responses. Power cards made up 19.82% of the responses, followed by cartooning and comic strip

conversations as being 9.01% of the responses. Of the 118 respondents, 7 skipped this question.

Few responded that they do not use narratives. One respondent, who self-identified as a special educator, reported that he/she currently does not use social narratives. This respondent only works with one student on the autism spectrum and that student reportedly refuses to read the narratives. This special educator was the only respondent to disagree with the effectiveness of social narratives in preparing an individual to respond successfully to a given social situation, reducing problematic behaviors, and in improving and increasing expected social behaviors.

In addition to social narratives, respondents indicated that they have used visual supports, social skills cards that introduce social situations for role-play and discussion, internet videos on a Smartboard, and social graphing. For other strategies, some respondents reported use acting and comedy, talking and problem solving with students, and videos.

Figure 2.2

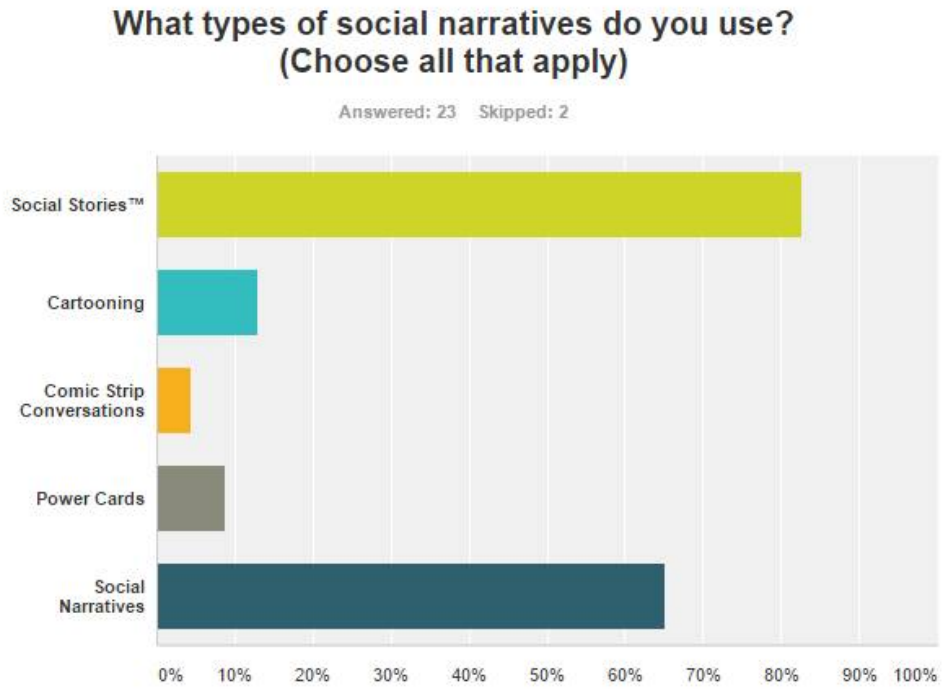

Table 2.2

Answer Choices	Responses	
Social Stories™	82.61%	19
Cartooning	13.04%	3
Comic Strip Conversations	4.35%	1
Power Cards	8.70%	2
Social Narratives	65.22%	15
Total Respondents: 23		

Type of Narratives Used (Caregivers). As shown in Table 2, of 25 caregivers surveyed, 23 answered and 2 skipped this question. Eighty three percent of caregivers responded that they choose social stories and sixty five percent chose social narratives. Relatively few caregivers chose cartooning, comic strip conversations, and power cards as types of social narratives that they use, with only 6 responses of the three types combined.

Figure 2.3

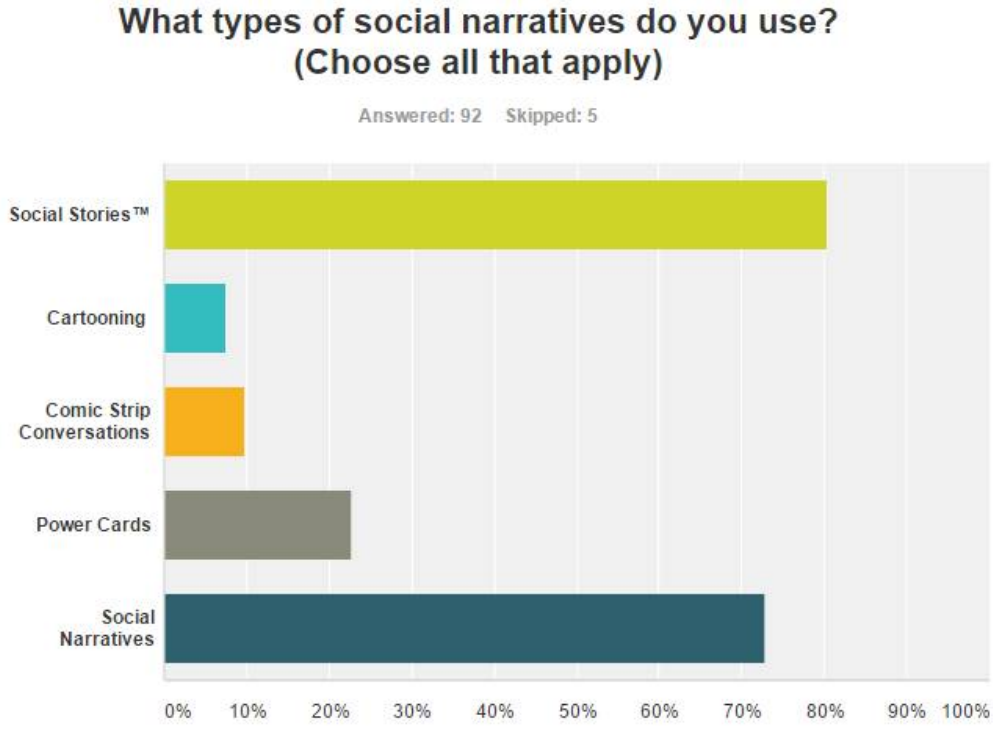

Table 2.3

Answer Choices	Responses	
Social Stories™	80.43%	74
Cartooning	7.61%	7
Comic Strip Conversations	9.78%	9
Power Cards	22.83%	21
Social Narratives	72.83%	67
Total Respondents: 92		

Type of Narratives Used (Educators). Of 97 educators surveyed, 92 answered and 5 skipped this question (see *Figure 2.3* and *Table 2.3*). Eighty percent of educators responded that they choose social stories and seventy three percent chose social narratives. Twenty three percent chose power cares and few educators chose cartooning or comic strip conversations.

Types of Narratives Used (Differences). When considering type of social narratives being used, educators and caregivers both responded with social stories™ and social narratives more frequently than the other types of social narratives, power cards, cartooning, or comic strip conversations. Both groups are consistent in their reported choice of type of social narratives. There is no significant difference between the caregivers and educators in the type of social narratives that they report to choose.

Figure 2.1

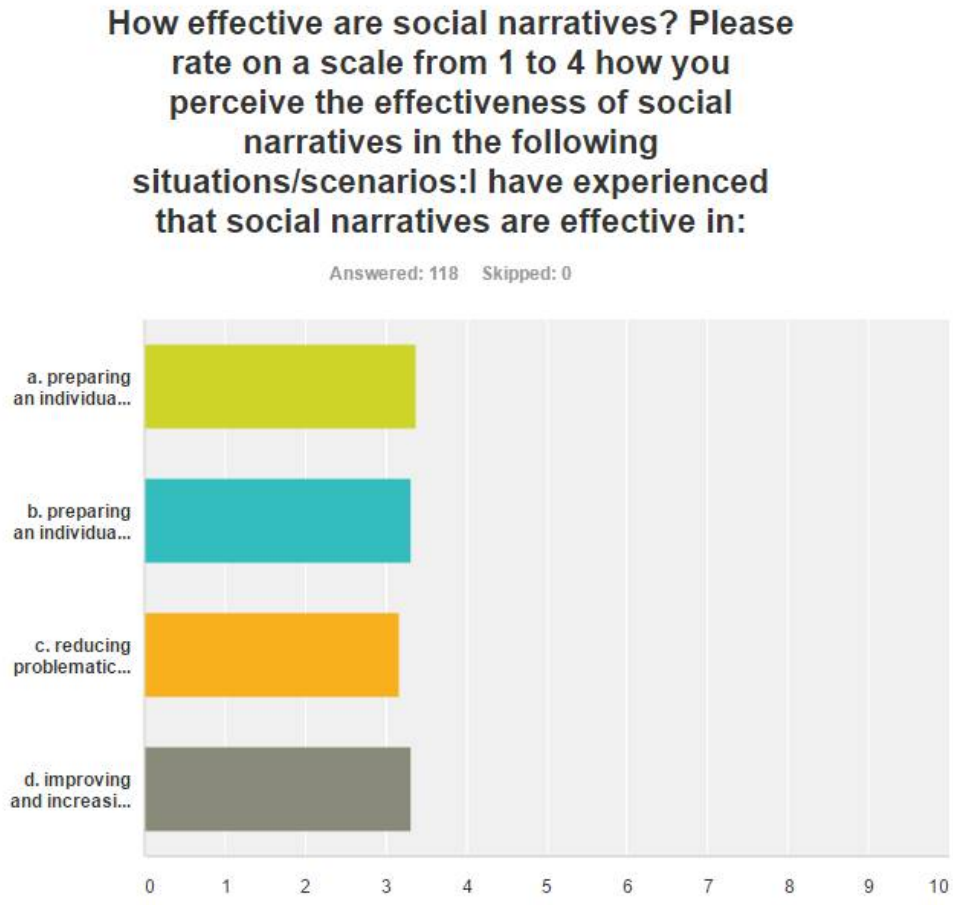

Table 3.1

	Strongly Disagree	Disagree	Agree	Strongly Agree	Total	Weighted Average
a. preparing an individual to respond successfully to a change in routine or schedule	0.00% 0	3.57% 4	53.57% 60	42.86% 48	112	3.39
b. preparing an individual to respond successfully to a given social situation	0.88% 1	5.31% 6	54.87% 62	38.94% 44	113	3.32
c. reducing problematic behaviors	0.89% 1	9.82% 11	59.82% 67	29.46% 33	112	3.18
d. improving and increasing expected social behaviors	0.88% 1	5.31% 6	55.75% 63	38.05% 43	113	3.31

Narrative Effectiveness (Combined). All respondents answered the survey question about perceived effectiveness (see Figure 3.1 and Table 3.1 above). The majority of respondents strongly agreed or agreed in their perception of the effectiveness of social narratives in preparing an individual to respond successfully to a change in routine or schedule (96.43%), preparing an individual to respond successfully to a given social situation (93.81%), reducing problematic behaviors (89.28%), and for improving and increasing expected social behaviors (93.8%). Less than ten percent of respondents disagreed that social narratives were effective. Only one respondent (<1%) strongly disagreed regarding the effectiveness and this respondent, as noted previously, reported that he/she has only worked with one individual with autism spectrum disorder who refused to read social narratives.

Figure 3.2

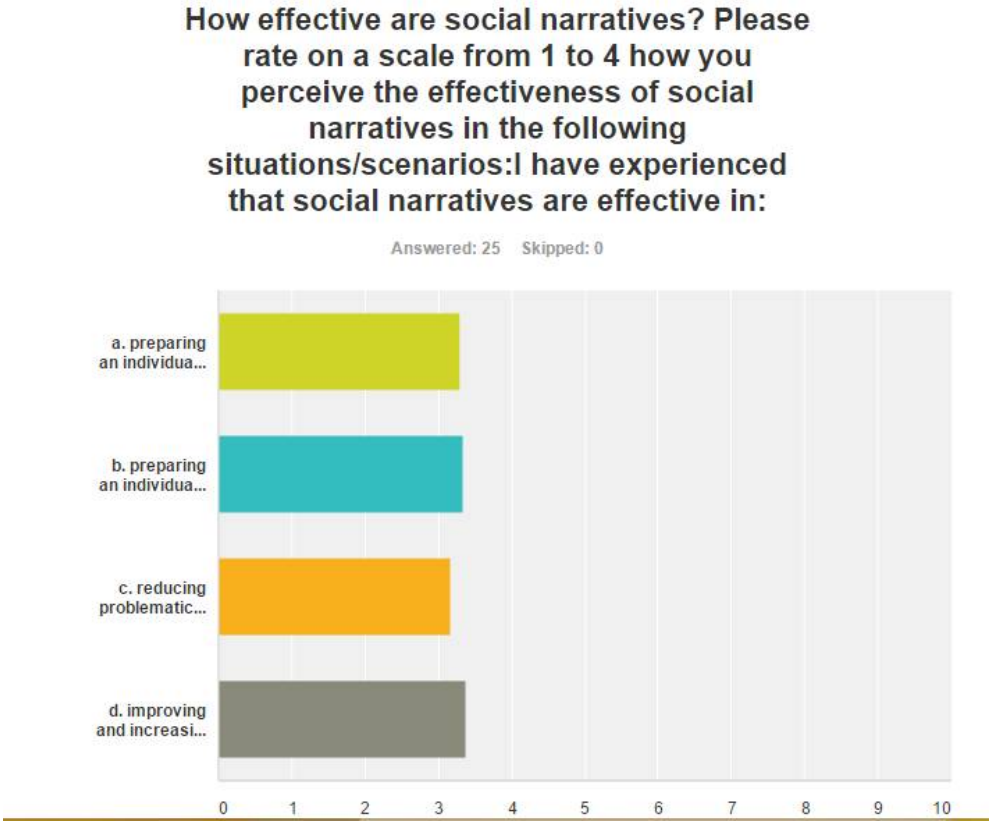

Table 3.2

	Strongly Disagree	Disagree	Agree	Strongly Agree	Total	Weighted Average
a. preparing an individual to respond successfully to a change in routine or schedule	0.00% 0	12.50% 3	45.83% 11	41.67% 10	24	3.29
b. preparing an individual to respond successfully to a given social situation	0.00% 0	8.70% 2	47.83% 11	43.48% 10	23	3.35
c. reducing problematic behaviors	0.00% 0	13.64% 3	54.55% 12	31.82% 7	22	3.18
d. improving and increasing expected social behaviors	0.00% 0	4.35% 1	52.17% 12	43.48% 10	23	3.39

Narrative Effectiveness (Caregivers). When considering caregiver perceptions of the effectiveness of social narratives, perceptions were typically positive (See *Table 3.2* and *Figure 3.2* above). All caregivers responded to the survey question about perceived effectiveness, however there were not 25 responses to each option, indicating that the caregivers did not rate their perception on each respective scenario given to indicate effectiveness. The majority of respondents strongly agreed or agreed in their perception of the effectiveness of social narratives in preparing an individual to respond successfully to a change in routine or schedule (87.5%), preparing an individual to respond successfully to a given social situation (91.31%), reducing problematic behaviors (86.37%), and for improving and increasing expected social behaviors (95.65%). Less than fifteen percent of respondents disagreed that social narratives were effective, with less than or equal to 3 respondents disagreeing on each option. No respondents strongly disagreed regarding the effectiveness.

Figure 3.3

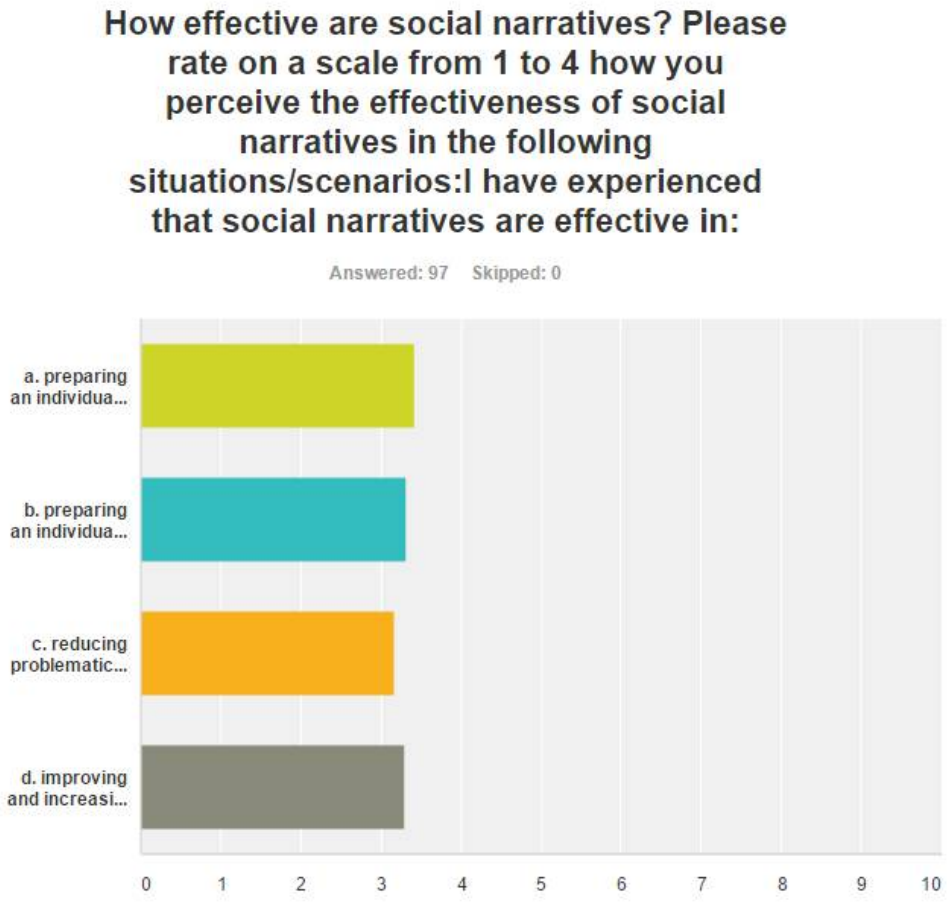
How effective are social narratives? Please rate on a scale from 1 to 4 how you perceive the effectiveness of social narratives in the following situations/scenarios:I have experienced that social narratives are effective in:
Answered: 97 Skipped: 0
a. preparing an individua...
b. preparing an individua...
c. reducing problematic...
d. improving and increasi...
0
1
2
3
4
5
6
7
8
9
10

Table 3.3

	Strongly Disagree	Disagree	Agree	Strongly Agree	Total	Weighted Average
a. preparing an individual to respond successfully to a change in routine or schedule	0.00% 0	1.09% 1	54.35% 50	44.57% 41	92	3.43
b. preparing an individual to respond successfully to a given social situation	1.06% 1	4.26% 4	57.45% 54	37.23% 35	94	3.31
c. reducing problematic behaviors	1.08% 1	8.60% 8	61.29% 57	29.03% 27	93	3.18
d. improving and increasing expected social behaviors	1.08% 1	5.38% 5	55.91% 52	37.63% 35	93	3.30

Narrative Effectiveness (Educators). When considering educator perceptions of the effectiveness of social narratives, perceptions were typically positive (See *Figure 3.3* and *Table 3.3* above). All educators responded to the survey question about perceived effectiveness, however there were not 97 responses to each option, indicating that the educators did not rate their perception on each respective scenario given to indicate effectiveness. The majority of respondents strongly agreed or agreed in their perception of the effectiveness of social narratives in preparing an individual to respond successfully to a change in routine or schedule (98.92%), preparing an individual to respond successfully to a given social situation (94.68%), reducing problematic behaviors (90.32%), and for improving and increasing expected social behaviors (93.54%). Less than ten percent of respondents disagreed that social narratives were effective, with less than or equal to 3 respondents disagreeing on each option. One educator strongly disagreed regarding the effectiveness, as mentioned previously.

Narrative Effectiveness (Differences). When considering perceived effectiveness of social narratives, both educators and caregivers respond positively. A higher percentage of caregivers (13.64%) than educators (8.6%) responded that they disagree with the effectiveness of social narratives to reduce problematic behaviors. Educator perception was more positive that social narratives are more effective at preparing for a change in routine, with 1% disagreeing with effectiveness, compared to 12.5% of caregivers. This was the only significantly different response between groups with a Pearson Probability Chi-square value of 0.0277, with a value less than 0.05 being considered significant.

Figure 4.1

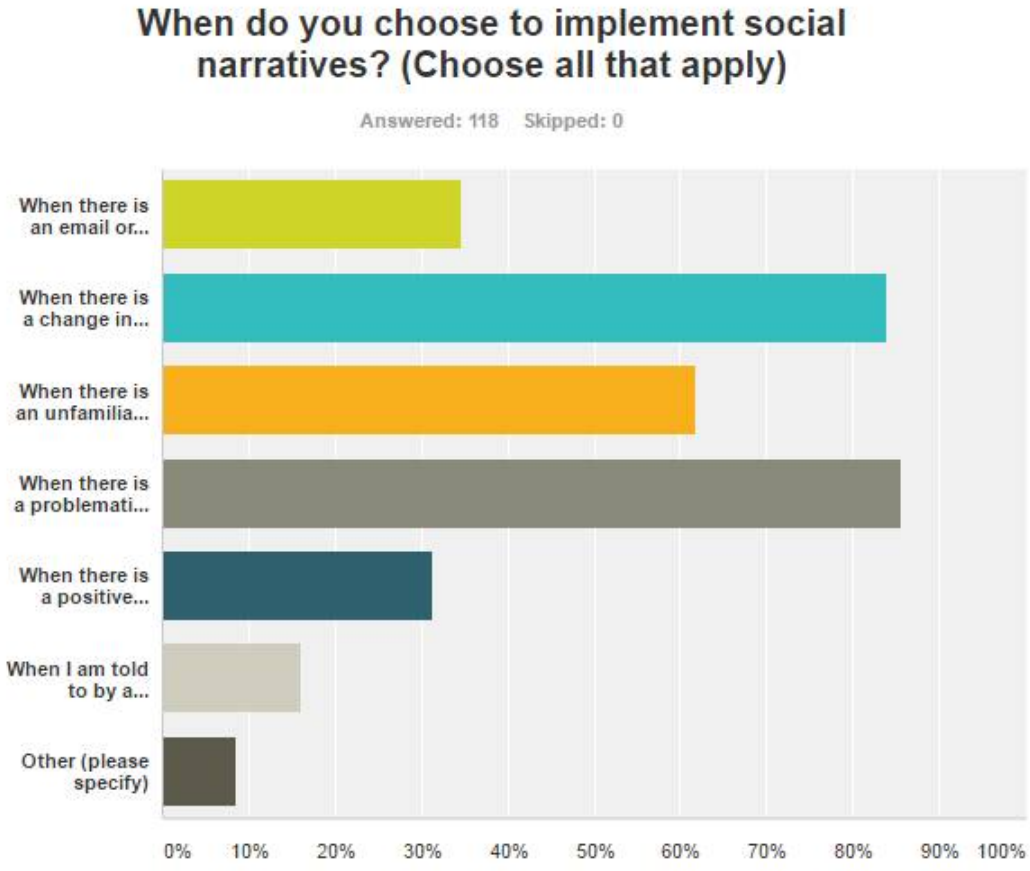

Table 4.1

Answer Choices	Responses	
When there is an email or reminder about an upcoming event or holiday.	34.75%	41
When there is a change in schedule or routine.	83.90%	99
When there is an unfamiliar or upcoming novel social situation.	61.86%	73
When there is a problematic behavior that needs to be addressed.	85.59%	101
When there is a positive behavior that I want to increase.	31.36%	37
When I am told to by a supervisor or other staff member.	16.10%	19
Other (please specify) Responses	8.47%	10
Total Respondents: 118		

Implementation Timing (Combined). When asked about when respondents choose to implement social narratives, they responded to indicate that only 34.75% % implement narratives when there is an email or reminder about an upcoming event or holiday, 83.9% when there is a change in schedule or routine, 61.86% implement narratives when there is an unfamiliar or upcoming novel social situation, 85.59% implement narratives when there is a problematic behavior that needs to be addressed, 31.36% implement narratives when there is a positive behavior to increase, and 16.10% implement narratives when told to by a supervisor or other staff member (see *Figure 4.1* and *Table 4.1* above). Respondents included that they may use social narratives when situations present that are new or don't go as expected.

Figure 4.2

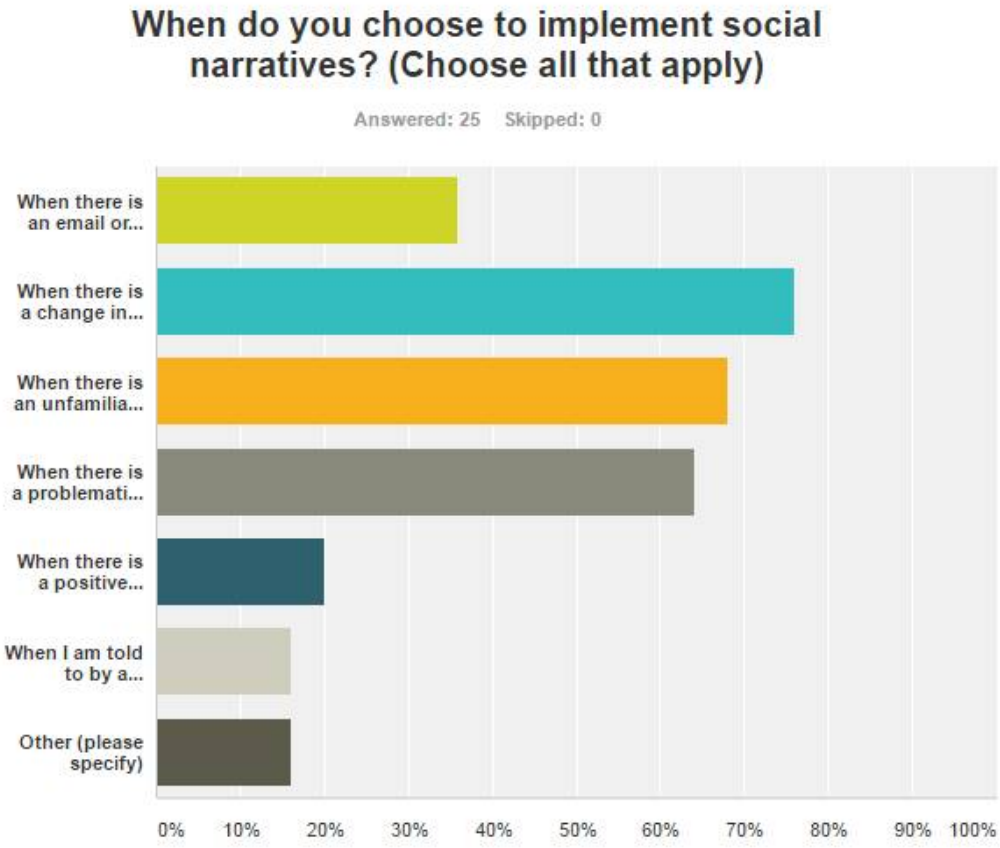

Table 4.2

Answer Choices	Responses	
When there is an email or reminder about an upcoming event or holiday.	36.00%	9
When there is a change in schedule or routine.	76.00%	19
When there is an unfamiliar or upcoming novel social situation.	68.00%	17
When there is a problematic behavior that needs to be addressed.	64.00%	16
When there is a positive behavior that I want to increase.	20.00%	5
When I am told to by a supervisor or other staff member.	16.00%	4
Other (please specify) Responses	16.00%	4
Total Respondents: 25		

Implementation Timing (Caregivers). When caregivers were asked about when they choose to implement social narratives, they responded to indicate that 36% implement narratives when there is an email or reminder about an upcoming event or

holiday, 76% implement narratives when there is a change in schedule or routine, 68% implement narratives when there is an unfamiliar or upcoming novel social situation, 64% implement narratives when there is a problematic behavior that needs to be addressed, 20% do so when there is a positive behavior to increase, and 16% implement narratives when told to by a supervisor or other staff member (see *Figure 4.2* and *Table 4.2* above). Other responses included that three of the caregivers report using social narratives in daily life and day to day routine changes, to prepare for change and to teach. One reported improvement in social behavior.

Figure 3.3

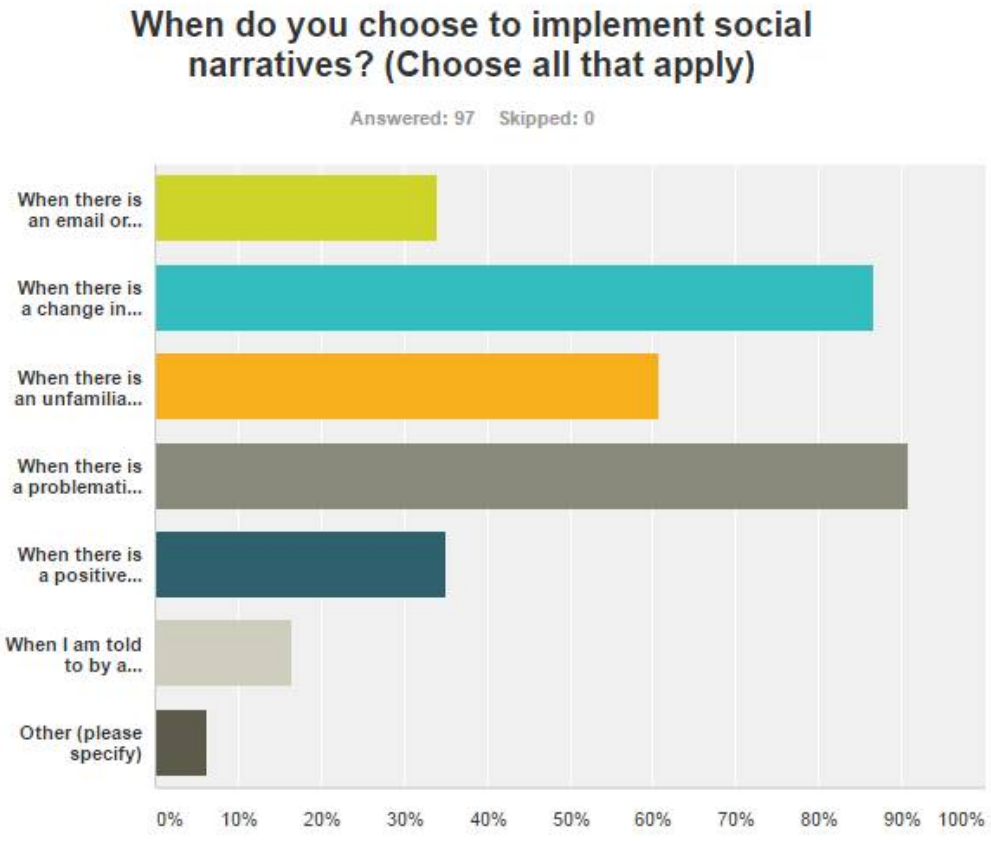

Table 4.3

Answer Choices	Responses	
When there is an email or reminder about an upcoming event or holiday.	34.02%	33
When there is a change in schedule or routine.	86.60%	84
When there is an unfamiliar or upcoming novel social situation.	60.82%	59
When there is a problematic behavior that needs to be addressed.	90.72%	88
When there is a positive behavior that I want to increase.	35.05%	34
When I am told to by a supervisor or other staff member.	16.49%	16
Other (please specify) Responses	6.19%	6
Total Respondents: 97		

Implementation Timing (Educators). When educators were asked about when they choose to implement social narratives, they responded to indicate that 34% implement narratives when there is an email or reminder about an upcoming event or holiday, 86.8% implement narratives when there is a change in schedule or routine, 60.82% when there is an unfamiliar or upcoming novel social situation, and 90.72% implement narratives when there is a problematic behavior that needs to be addressed, 35.05% implement narratives when there is a positive behavior to increase, and 16.49% implement narratives when told to by a supervisor or other staff member (see *Figure 4.3* and *Table 4.3* above).

Implementation Timing (Differences). When comparing the responses about when caregivers and educators choose to implement social narratives, the only significant differences between groups was on the choice when there is a problematic behavior. Of educators 90.72% responded that they choose to implement social narratives when there is a problematic behavior, compared to 64% of caregivers This was the only significantly different response between groups with a Pearson Probability Chi-square value of 0.0005 with a value less than 0.05 being considered significant. Educators

reported that they choose to implement social narratives more often than caregivers for problematic behaviors.

Figure 4.1

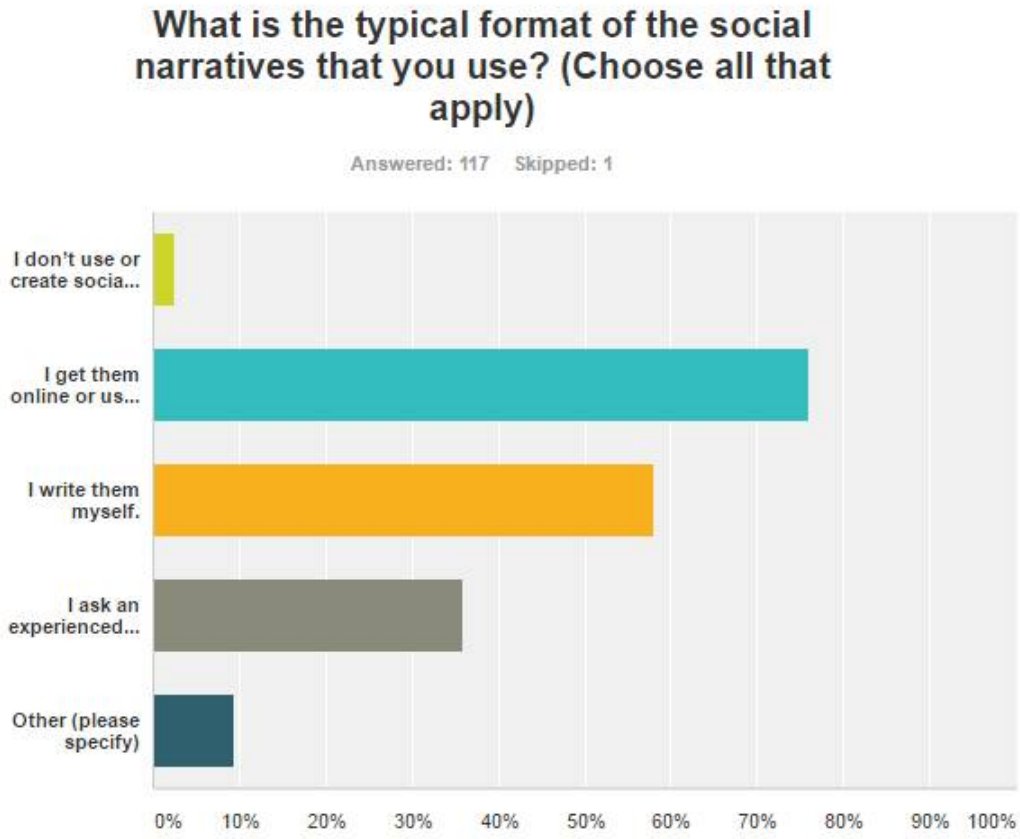

Table 5.1

Answer Choices		Responses	
I don't use or create social narratives.		2.56%	3
I get them online or used pre-written stories written by someone else.		76.07%	89
I write them myself.		58.12%	68
I ask an experienced writer to write them for me.		35.90%	42
Other (please specify)	Responses	9.40%	11
Total Respondents: 117			

Implementation Format (Combined). When asked about the typical format of social narratives used, 2.56% of respondents (or 3) chose that I don't use or create social

narratives, 76.07% of respondents chose I get them online or used pre-written stories written by someone else 58.12% chose I write them myself, and 35.90% chose I ask an experienced writer to write them for me (See *Figure 5.1* and *Table 5.1* above).

Figure 5.2

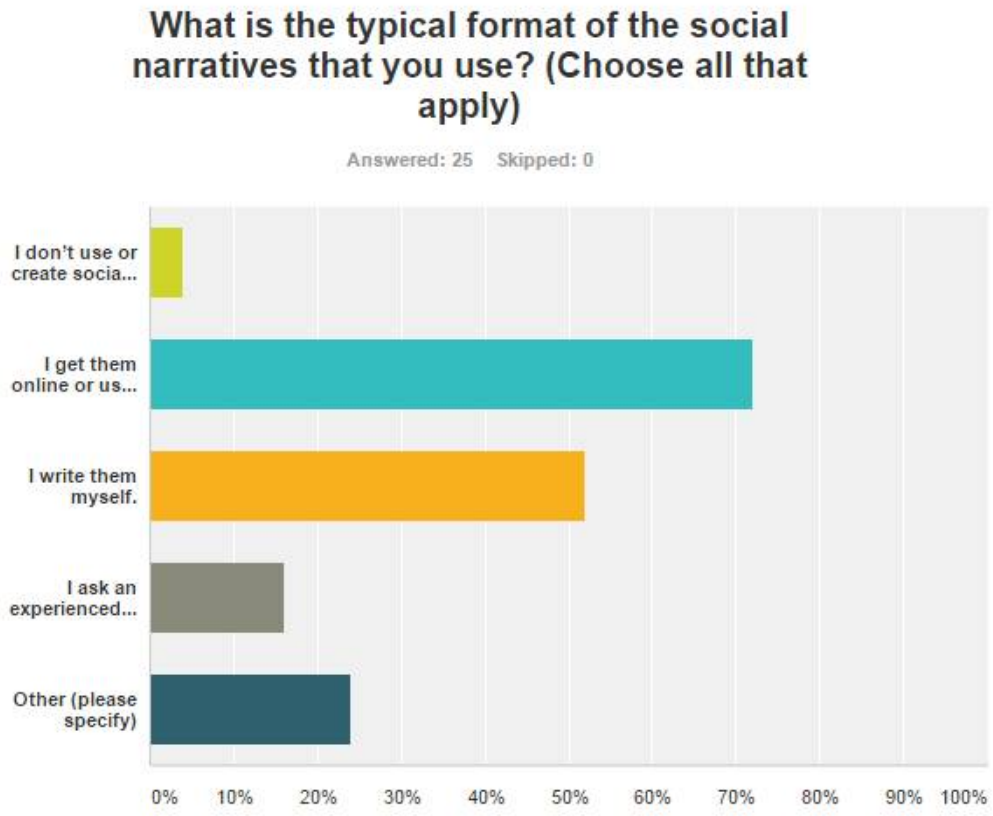

Table 5.2

Answer Choices		Responses	
I don't use or create social narratives.		4.00%	1
I get them online or used pre-written stories written by someone else.		72.00%	18
I write them myself.		52.00%	13
I ask an experienced writer to write them for me.		16.00%	4
Other (please specify)	Responses	24.00%	6
Total Respondents: 25			

Implementation Format (Caregivers). When asked about the typical format of social narratives used, 4% of caregivers (or 1) chose I don't use or create social narratives, 72% of caregivers chose I get them online or used pre-written stories written by someone else, 52% chose I write them myself, and 16% chose I ask an experienced writer to write them for me (see *Figure 5.2* and *Table 5.2* above).

Figure 5.3

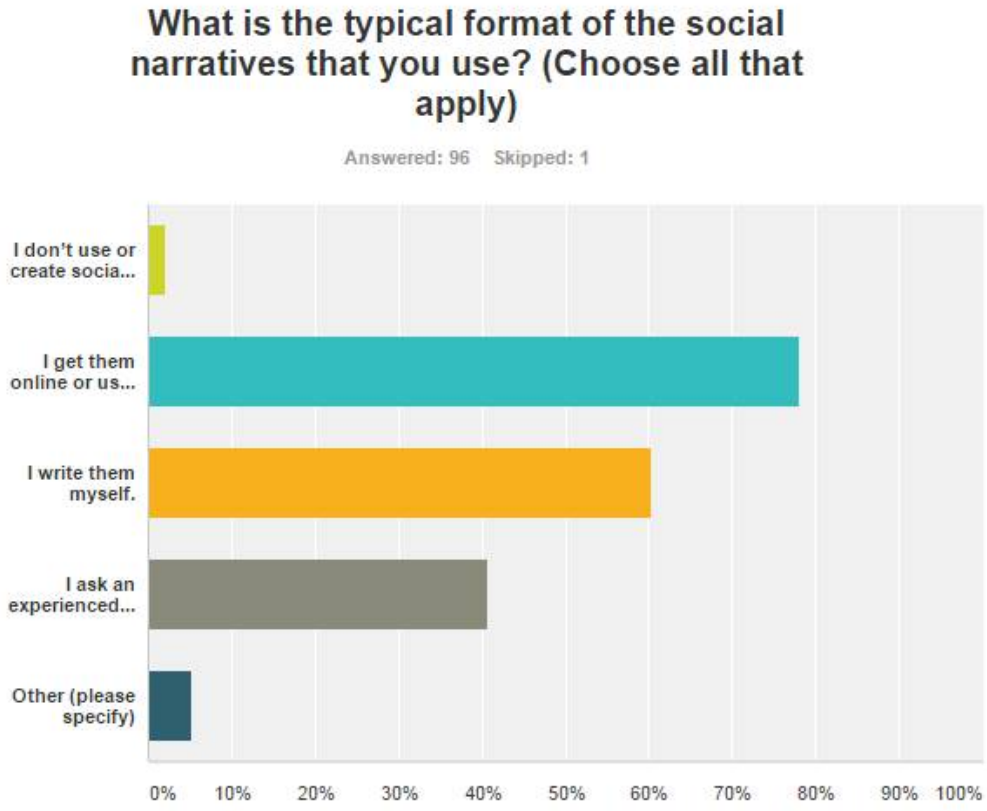

Table 5.3

Answer Choices		Responses	
I don't use or create social narratives.		2.08%	2
I get them online or used pre-written stories written by someone else.		78.13%	75
I write them myself.		60.42%	58
I ask an experienced writer to write them for me.		40.63%	39
Other (please specify)	Responses	5.21%	5
Total Respondents: 96			

Implementation Format (Educators). When asked about the typical format of social narratives used, 2.08% of respondents (or 2) chose that I don't use or create social narratives, 78.13% of respondents chose I get them online or used pre-written stories written by someone else 60.42% chose I write them myself, and 40.63% chose I ask an experienced writer to write them for me (see *Figure 5.3* and *Table 5.3* above).

Implementation Format (Differences). When asked about the typical format of social narratives used, the only significant difference was that 24% of caregivers chose to share other examples, while 9% of educators chose other responses. This was the only significantly different response between groups with a Pearson Probability Chi-square value of 0.0045 with a value less than 0.05 being considered significant. The other responses shared included that caregivers process the situation verbally and that narratives are sent home from school.

Figure 5.1

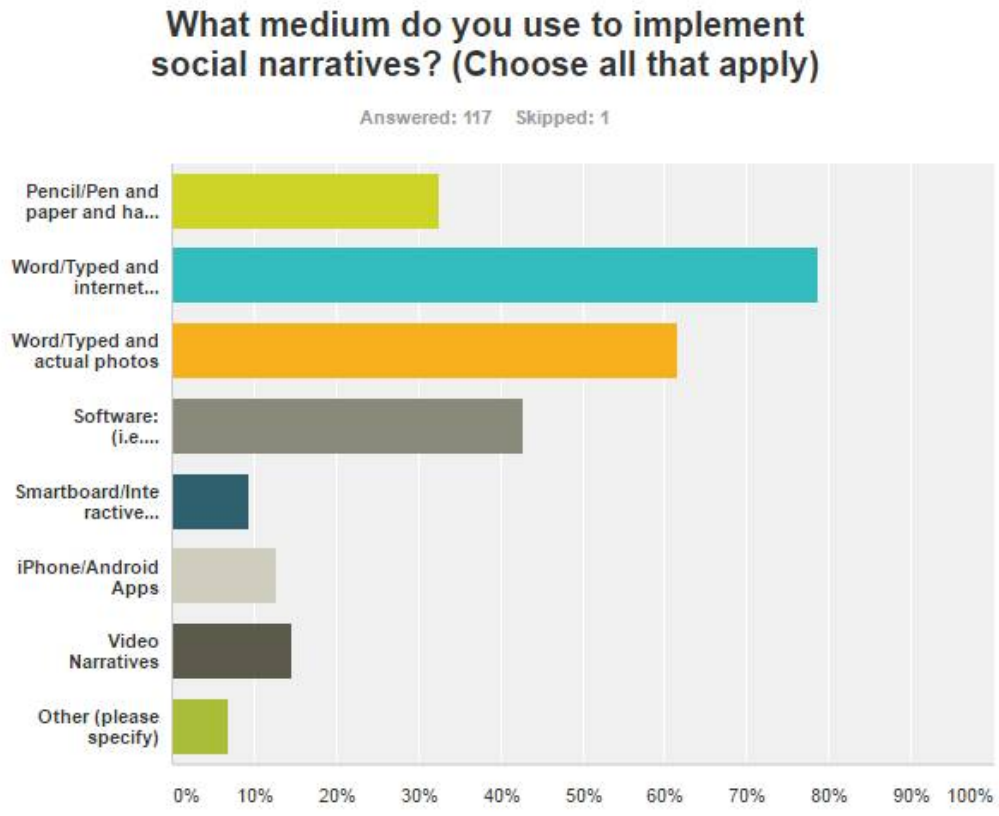

Table 6.1

Answer Choices		Responses	
Pencil/Pen and paper and hand drawings		32.48%	38
Word/Typed and internet pictures (i.e. Google Images)		78.63%	92
Word/Typed and actual photos		61.54%	72
Software: (i.e. Boardmaker™ images, Symbolstix™, LessonPix™, etc.)		42.74%	50
Smartboard/Interactive Whiteboard		9.40%	11
iPhone/Android Apps		12.82%	15
Video Narratives		14.53%	17
Other (please specify)	Responses	6.84%	8
Total Respondents: 117			

Medium Used (Combined). When asked what medium respondents use to implement social narratives, 32.48% of respondents chose pencil/pen and paper and hand drawings, 78.63% chose word/typed and internet pictures, 61.54% chose word/typed and actual photos, 42.74% chose software, 9.4% chose Smartboard/Interactive Whiteboard, 12.82% chose iPhone/Android Apps, and 14.53% chose Video Narratives (see *Figure 6.1* and *Table 6.1* above).

Figure 6.2

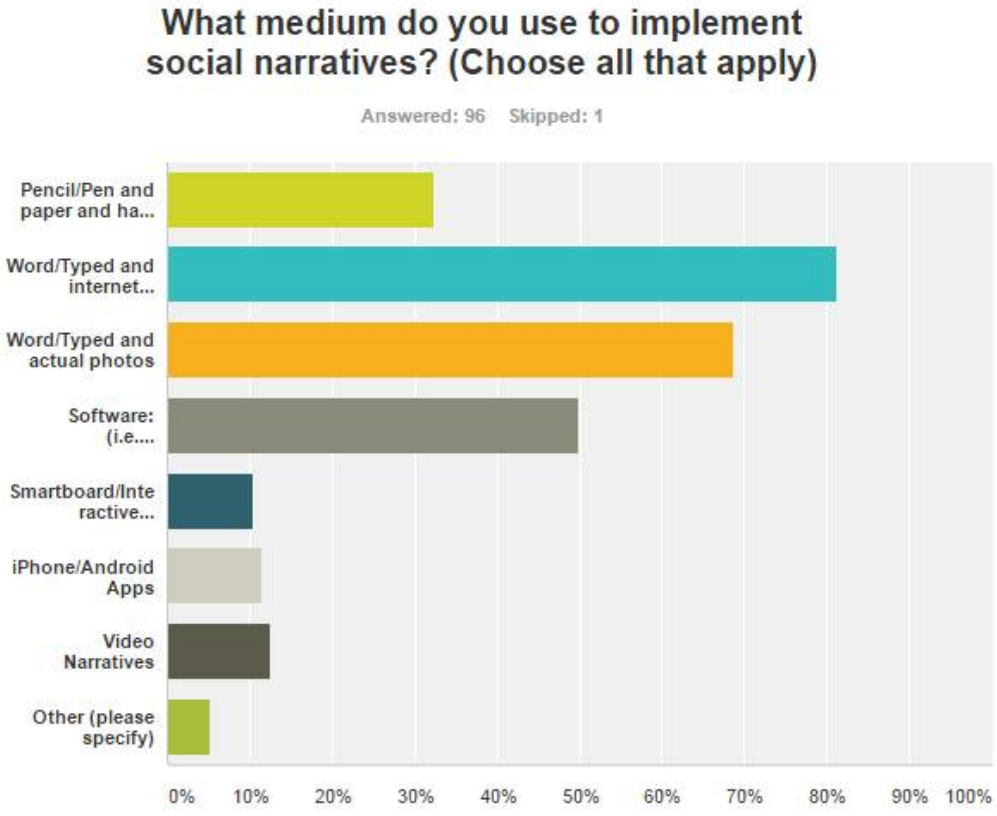

Table 6.2

Answer Choices		Responses	
Pencil/Pen and paper and hand drawings		32.29%	31
Word/Typed and internet pictures (i.e. Google Images)		81.25%	78
Word/Typed and actual photos		68.75%	66
Software: (i.e. Boardmaker™ images, Symbolstix™, LessonPix™, etc.)		50.00%	48
Smartboard/Interactive Whiteboard		10.42%	10
iPhone/Android Apps		11.46%	11
Video Narratives		12.50%	12
Other (please specify)	Responses	5.21%	5
Total Respondents: 96			

Medium Used (Educators). When asked what medium educators use to implement social narratives, 32.29% chose pencil/pen and paper and hand drawings, 81.25% chose word/typed and internet pictures, 68.75% chose word/typed and actual photos, 50% chose software, 10.42% chose Smartboard/Interactive Whiteboard, 11.46% chose iPhone/Android Apps, and 12.5% chose Video Narratives (see *Figure 6.2* and *Table 6.2* above).

Figure 6.3

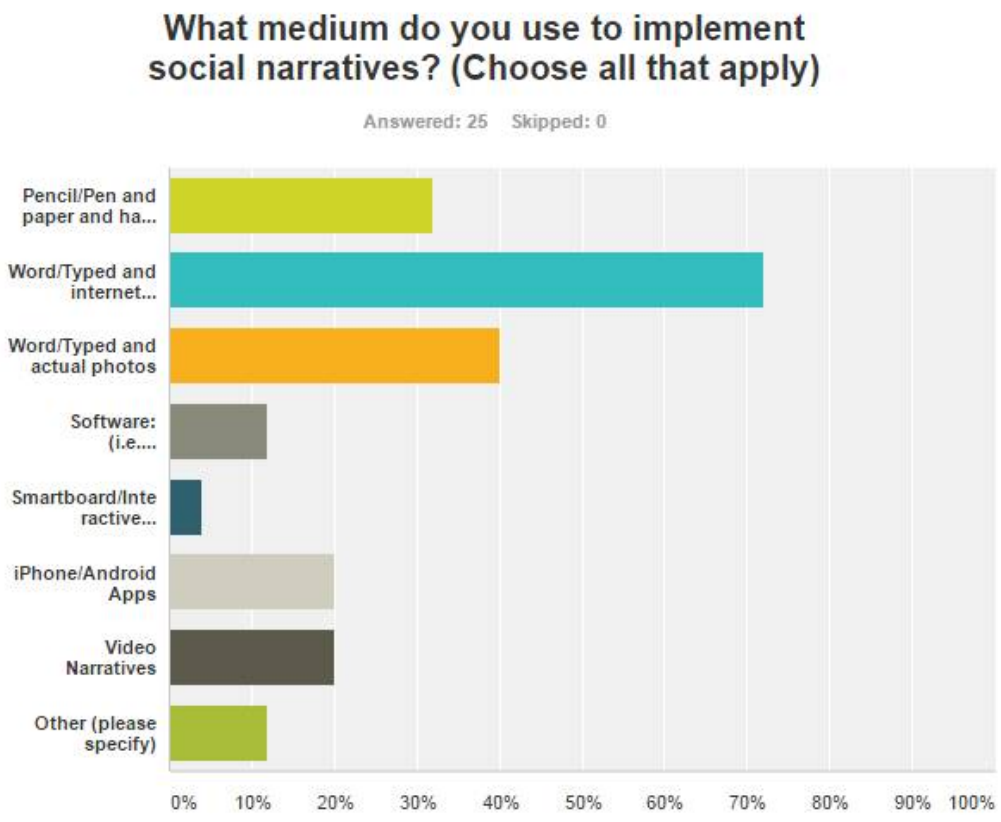

Table 6.3

Answer Choices	Responses	
Pencil/Pen and paper and hand drawings	32.00%	8
Word/Typed and internet pictures (i.e. Google Images)	72.00%	18
Word/Typed and actual photos	40.00%	10
Software: (i.e. Boardmaker™ images, Symbolstix™, LessonPix™, etc.)	12.00%	3
Smartboard/Interactive Whiteboard	4.00%	1
iPhone/Android Apps	20.00%	5
Video Narratives	20.00%	5
Other (please specify) Responses	12.00%	3
Total Respondents: 25		

Medium Used (Caregivers). When asked what medium respondents use to implement social narratives, 32% chose pencil/pen and paper and hand drawings, 72%

chose word/typed and internet pictures, 40% chose word/typed and actual photos, 12% chose software, 4% chose Smartboard/Interactive Whiteboard, 20% chose iPhone/Android Apps, and 20% chose Video Narratives. Three caregivers indicated that they act out the narrative or use verbal social narratives at home (See *Figure 6.3* and *Table 6.3* above).

Medium Used (Differences). When asked what medium respondents use to implement social narratives, the statistically significant differences reported between groups were the option to use typed stories with actual photos and software. Of educators, 68.75% chose typed stories with actual photos, while only 40% of caregivers chose this option. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.00152 with a value less than 0.05 being considered significant. Of educators, 50% chose software, while only 12% of caregivers chose software.

Figure 7.1

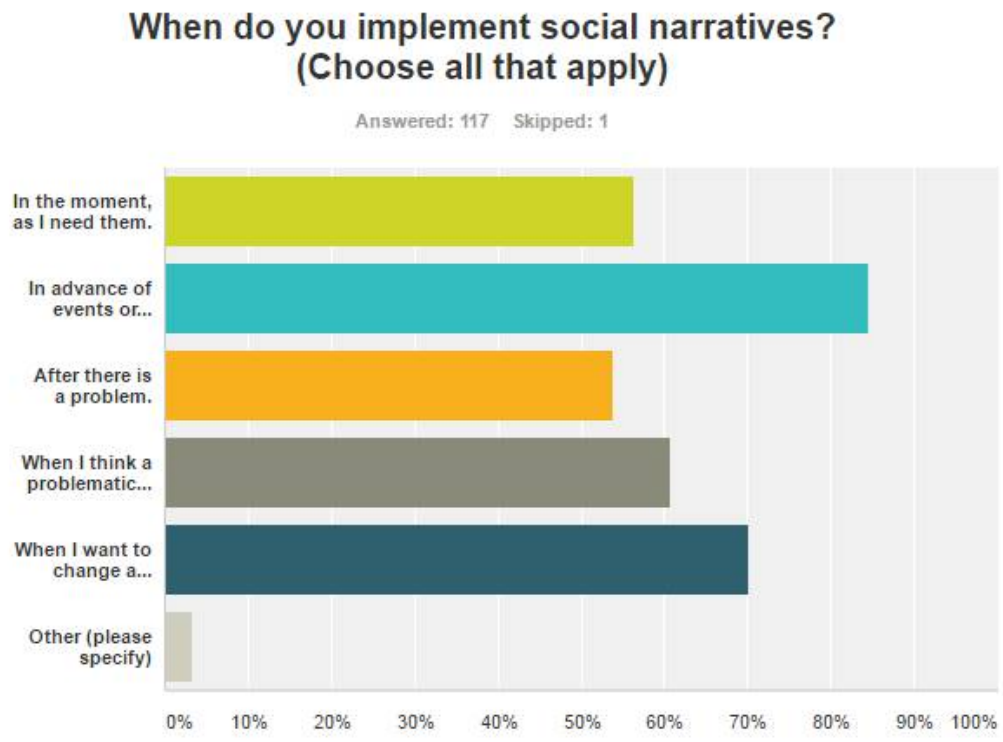

Table 7.1

Answer Choices		Responses	
In the moment, as I need them.		56.41%	66
In advance of events or situations.		84.62%	99
After there is a problem.		53.85%	63
When I think a problematic behavior might occur.		60.68%	71
When I want to change a behavior.		70.09%	82
Other (please specify)	Responses	3.42%	4
Total Respondents: 117			

When to implement, in response to events and/or behaviors (Combined).

When asked when respondents implement social narratives, 58.41% chose in the moment, as I need them, 84.62% chose in advance of events or situations, 53.85% chose after there is a problem, 60.68% chose when I think a problematic behavior might occur,

and 70.09% chose when I want to change a behavior (See *Figure 7.1* and *Table 7.1* above).

Figure 6.2

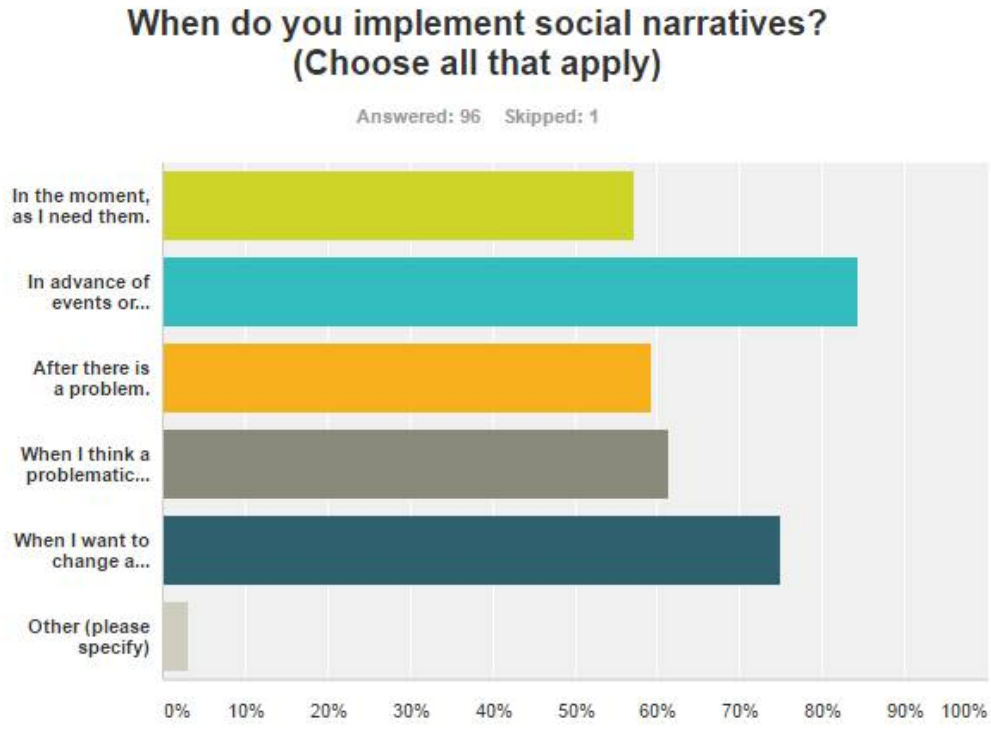

Table 7.2

Answer Choices		Responses	
In the moment, as I need them.		57.29%	55
In advance of events or situations.		84.38%	81
After there is a problem.		59.38%	57
When I think a problematic behavior might occur.		61.46%	59
When I want to change a behavior.		75.00%	72
Other (please specify)	Responses	3.13%	3
Total Respondents: 96			

When to implement, in response to events and/or behaviors (Educators).

When asked when respondents implement social narratives, 57.29% chose in the moment, as I need them 84.38% chose in advance of events or situations, 59.38% chose

after there is a problem, 61.46% chose when I think a problematic behavior might occur, and 75% chose when I want to change a behavior (see *Figure 7.2* and *Table 7.2* above).

Figure 7.3

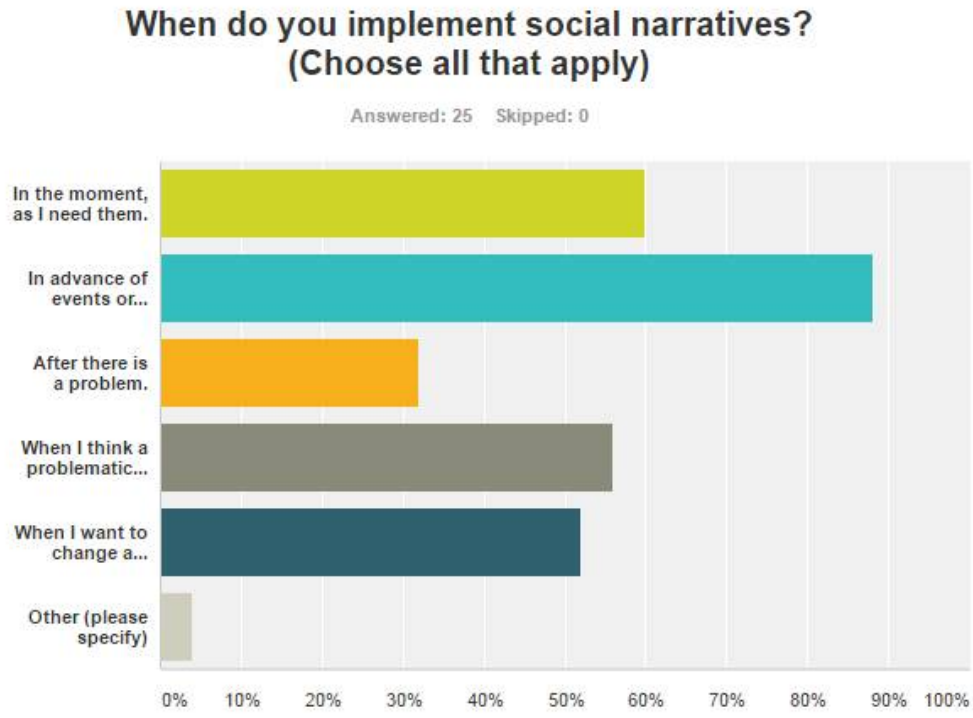

Table 7.3

Answer Choices		Responses	
In the moment, as I need them.		60.00%	15
In advance of events or situations.		88.00%	22
After there is a problem.		32.00%	8
When I think a problematic behavior might occur.		56.00%	14
When I want to change a behavior.		52.00%	13
Other (please specify)	Responses	4.00%	1
Total Respondents: 25			

When to implement, in response to events and/or behaviors (Caregivers).

When asked when caregivers implement social narratives, 60% chose in the moment, as I need them, 88% chose in advance of events or situations, 32% chose after there is a

problem, 56% chose when I think a problematic behavior might occur, and 52% chose when I want to change a behavior. One caregiver indicated that they implement social narratives anytime there is something new (see *Figure 7.3* and *Table 7.3* above).

When to implement, in response to events and/or behaviors (Differences). When asked when respondents choose to implement social narratives, the statistically significant difference reported between groups were the options after there is a problem and when I want to change a behavior. Of educators, 59.38% chose the option after there is a problem, while only 32% of caregivers chose the option after there is a problem. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.00157 with a value less than 0.05 being considered significant. Of educators, 75% chose the option when I want to change a behavior, compared to 52% of caregivers. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.00324 with a value less than 0.05 being considered significant.

Figure 7.1

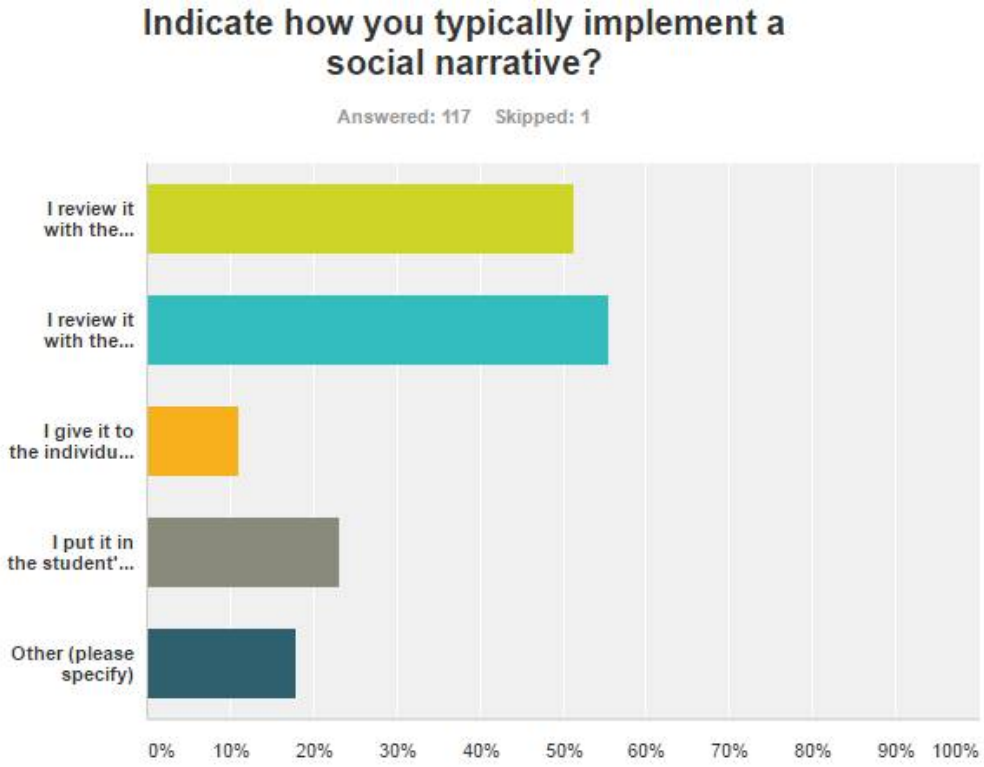

Table 8.1

Answer Choices	Responses
I review it with the individual every time.	51.28% 60
I review it with the individual initially and then the individual reviews it themselves.	55.56% 65
I give it to the individual to review.	11.11% 13
I put it in the student's folder or area so they can review it when they need it.	23.08% 27
Other (please specify) Responses	17.95% 21
Total Respondents: 117	

Typical Implementation (Combined). When asked how respondents implement social narratives, 51.28% respondents chose: I review it with the individual every time, 55.56% chose I review it with the individual initially and then the individual reviews it themselves, 11.11 chose I give it to the individual to review, and 23.08% chose I put it in

the student's folder or area so they can review it when they need it (see *Figure 8.1* and *Table 8.1* above).

Figure 8.2

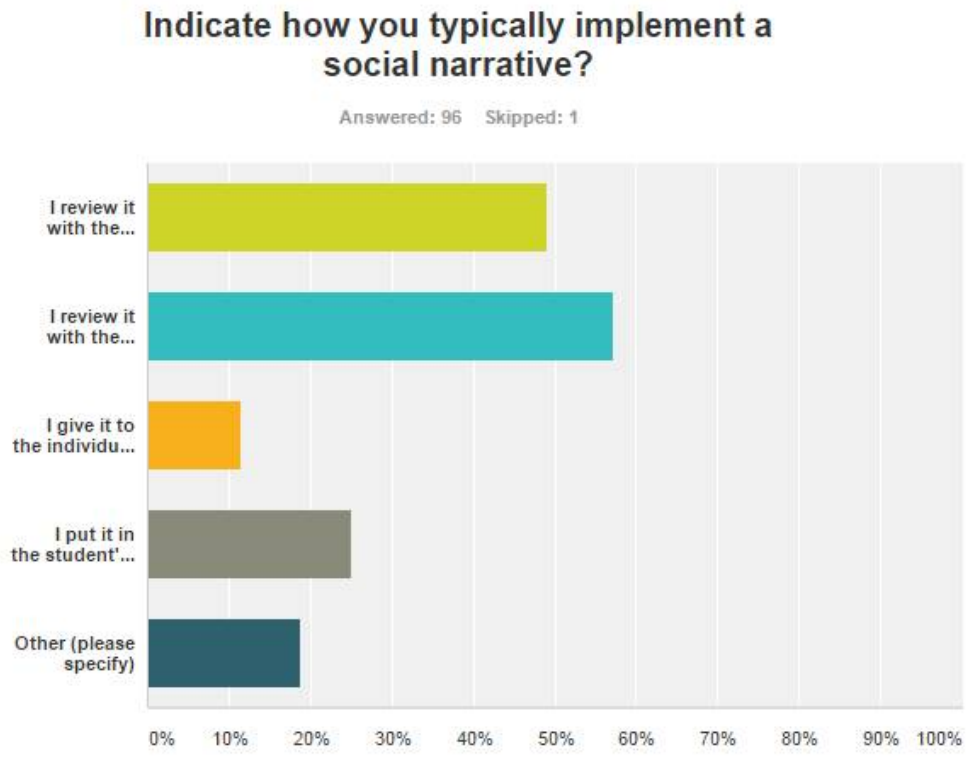

Table 8.2

Answer Choices	Responses
I review it with the individual every time.	48.96% 47
I review it with the individual initially and then the individual reviews it themselves.	57.29% 55
I give it to the individual to review.	11.46% 11
I put it in the student's folder or area so they can review it when they need it.	25.00% 24
Other (please specify) Responses	18.75% 18
Total Respondents: 96	

Typical Implementation (Educators). When asked how respondents implement social narratives, 48.96% of educators chose I review it with the individual every time,

57.29% chose I review it with the individual initially and then the individual reviews it themselves, 11.46% chose I give it to the individual to review, and 25% chose I put it in the student's folder or area so they can review it when they need it (see *Figure 8.2* and *Table 8.2* above).

Figure 8.3

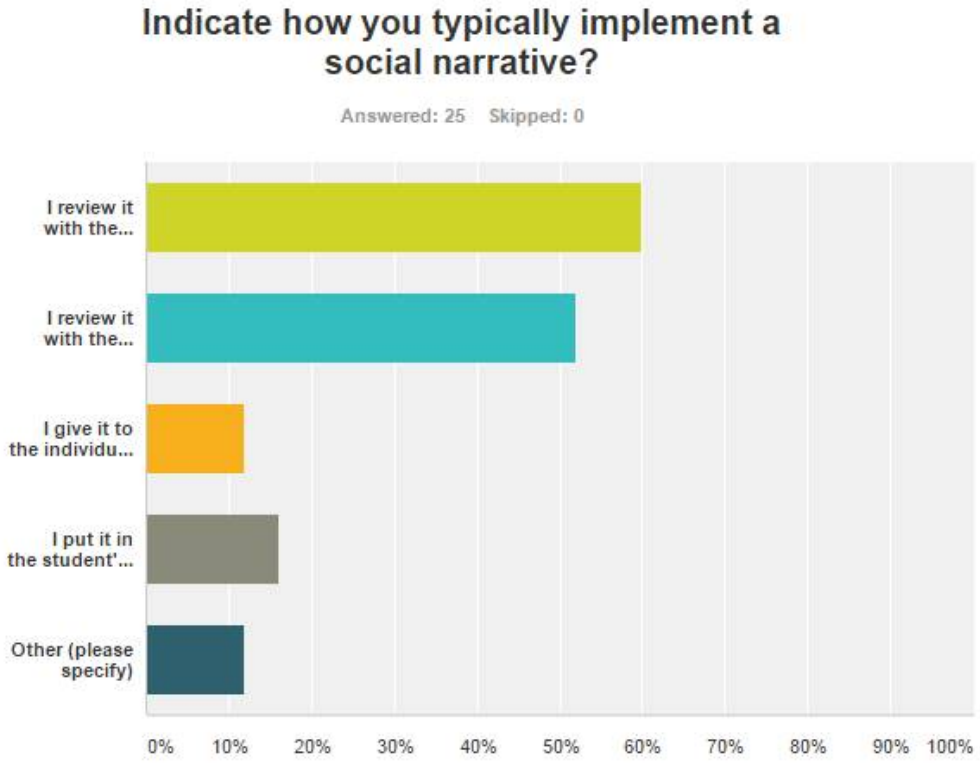

Table 8.3

Answer Choices	Responses
I review it with the individual every time.	60.00% 15
I review it with the individual initially and then the individual reviews it themselves.	52.00% 13
I give it to the individual to review.	12.00% 3
I put it in the student's folder or area so they can review it when they need it.	16.00% 4
Other (please specify) Responses	12.00% 3
Total Respondents: 25	

Typical Implementation (Caregivers). When asked how respondents implement social narratives, 60% of caregivers chose review it with the individual every time, 52% chose I review it with the individual initially and then the individual reviews it themselves, 12% chose I give it to the individual to review, and 16% chose I put it in the student's folder or area so they can review it when they need it. Three caregivers indicated that they follow up and discuss the narrative verbally (see *Figure 8.3* and *Table 8.3* above).

Typical Implementation (Differences). No significant differences were reported between groups when asked how respondents implement social narratives.

Figure 8.1

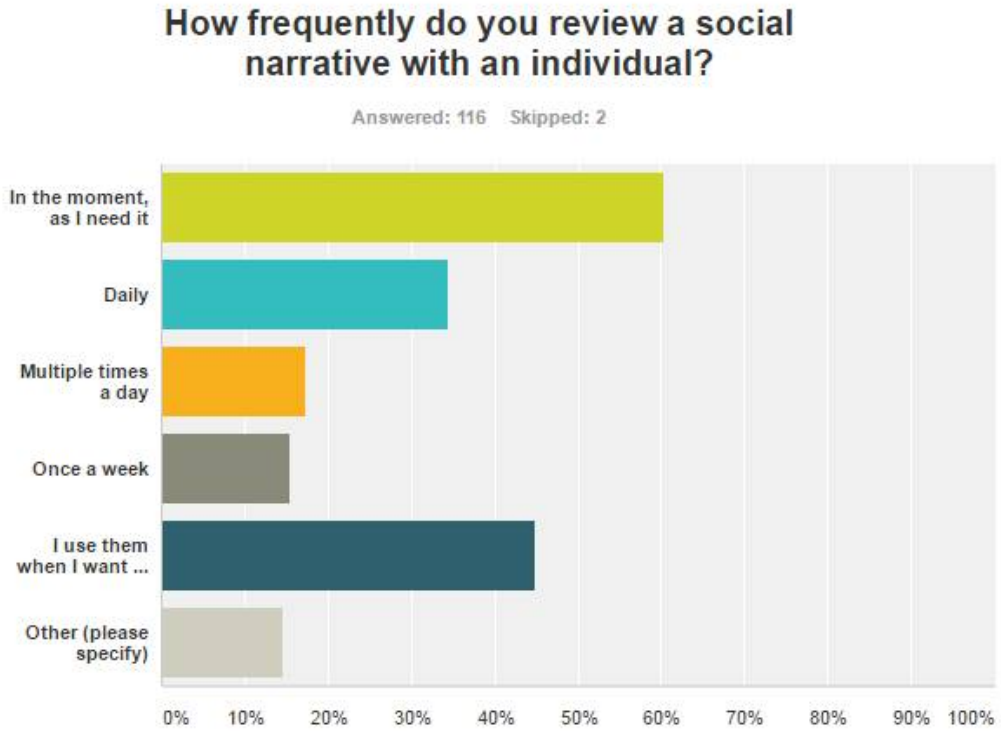

Table 9.1

Answer Choices		Responses	
In the moment, as I need it		60.34%	70
Daily		34.48%	40
Multiple times a day		17.24%	20
Once a week		15.52%	18
I use them when I want to change a behavior		44.83%	52
Other (please specify)	Responses	14.66%	17
Total Respondents: 116			

Implementation Frequency (Combined). When asked how frequently respondents review a social narrative with an individual, 60.34% of respondents chose in the moment as I need it, 34.48 % chose daily, 17.24% chose multiple times a day, 15.52% chose once a week, 44.83% chose I use them when I want to change a behavior (see *Figure 9.1* and *Table 9.1* above).

Figure 9.2

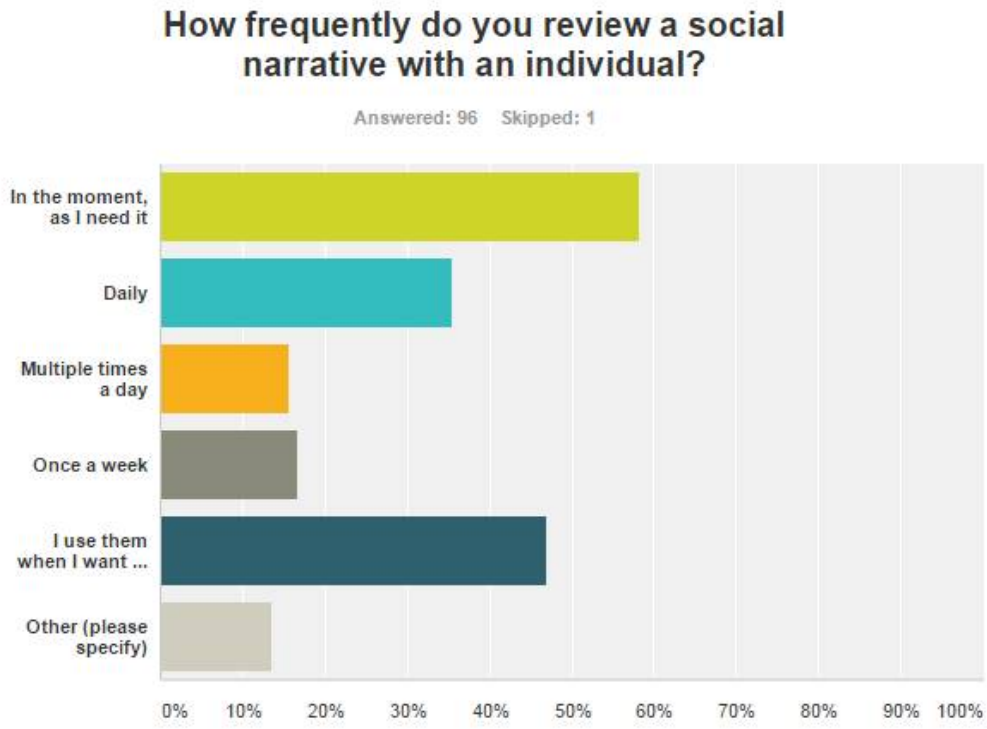

Table 9.2

Answer Choices		Responses	
In the moment, as I need it		58.33%	56
Daily		35.42%	34
Multiple times a day		15.63%	15
Once a week		16.67%	16
I use them when I want to change a behavior		46.88%	45
Other (please specify)	Responses	13.54%	13
Total Respondents: 96			

Implementation Frequency (Educators). When asked how frequently do you review a social narrative with an individual, 58.33% of educators chose in the moment as I need it, 35.42 % chose daily, 15.63% chose multiple times a day, 16.67% chose once a week, 40.88% chose I use them when I want to change a behavior (see *Figure 9.2* and *Table 9.2* above).

Figure 9.3

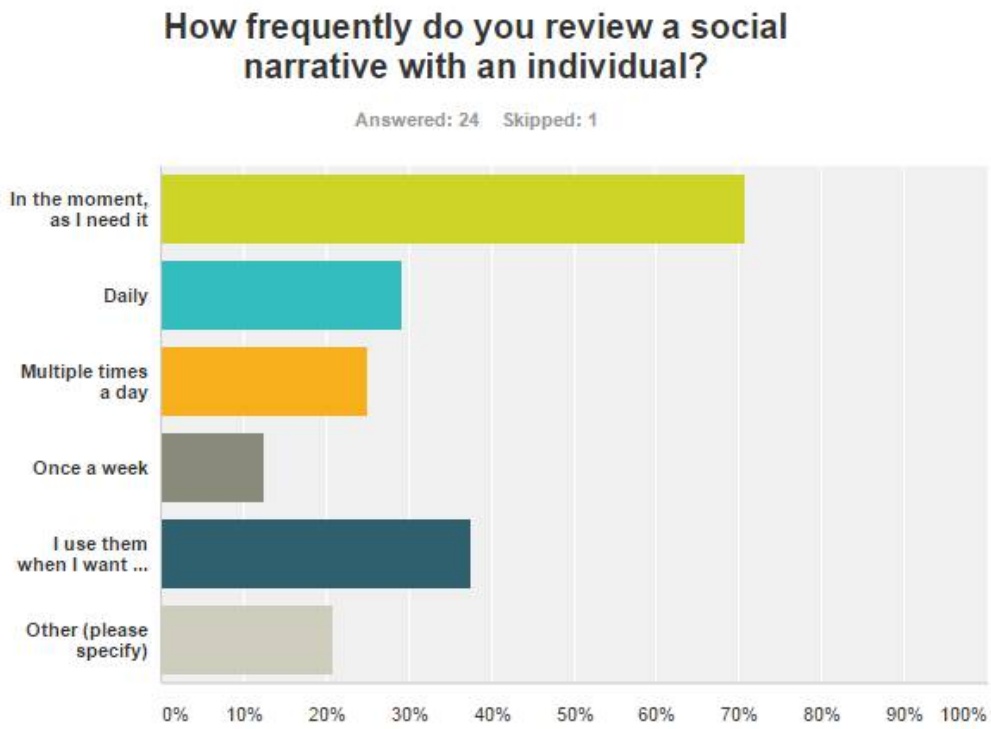

Table 9.3

Answer Choices		Responses	
In the moment, as I need it		70.83%	17
Daily		29.17%	7
Multiple times a day		25.00%	6
Once a week		12.50%	3
I use them when I want to change a behavior		37.50%	9
Other (please specify)	Responses	20.83%	5
Total Respondents: 24			

Implementation Frequency (Caregivers). When asked how frequently do you review a social narrative with an individual, 70.83% of caregivers chose in the moment as I need it, 29.17% chose daily, 25% chose multiple times a day, 12.50% chose once a week, and 37.50% chose I use them when I want to change a behavior (see *Figure 9.3* and *Table 9.3* above).

Implementation Frequency (Differences). No significant differences were reported between groups when asked how frequently respondents implement social narratives.

Figure 9.1

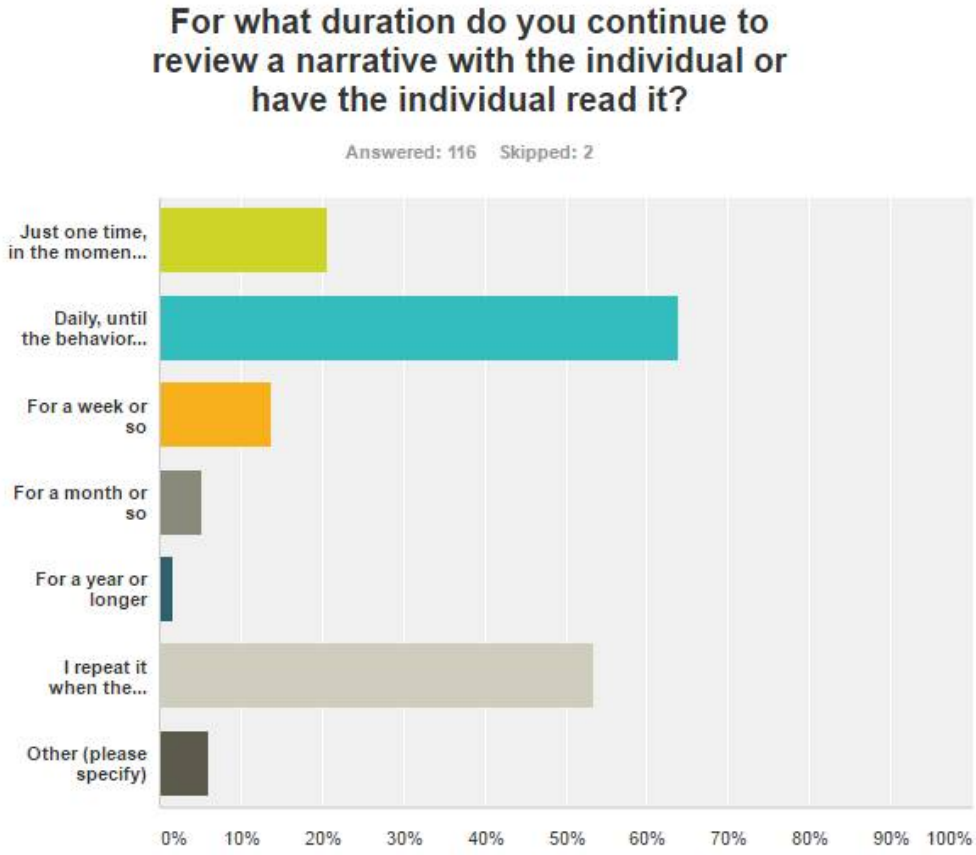

Table 10.1

Answer Choices		Responses	
Just one time, in the moment as I need it		20.69%	24
Daily, until the behavior improves or the situation is past		63.79%	74
For a week or so		13.79%	16
For a month or so		5.17%	6
For a year or longer		1.72%	2
I repeat it when the behavior or situation occurs again		53.45%	62
Other (please specify)	Responses	6.03%	7
Total Respondents: 116			

Implementation Duration (Combined). When asked what for duration do respondents continue to review narratives with the individual or have the individual read it, 20.69% chose just one time in the moment as I need it, 63.79% chose daily until the

behavior improves or the situation is past, 13.79% chose for a week or so, 5.17% chose for a month or so, 1.72% chose for a year or longer, and 53.45% chose I repeat it when the behavior or situation occurs again (see *Figure 10.1* and *Table 10.1* above).

Figure 10.2

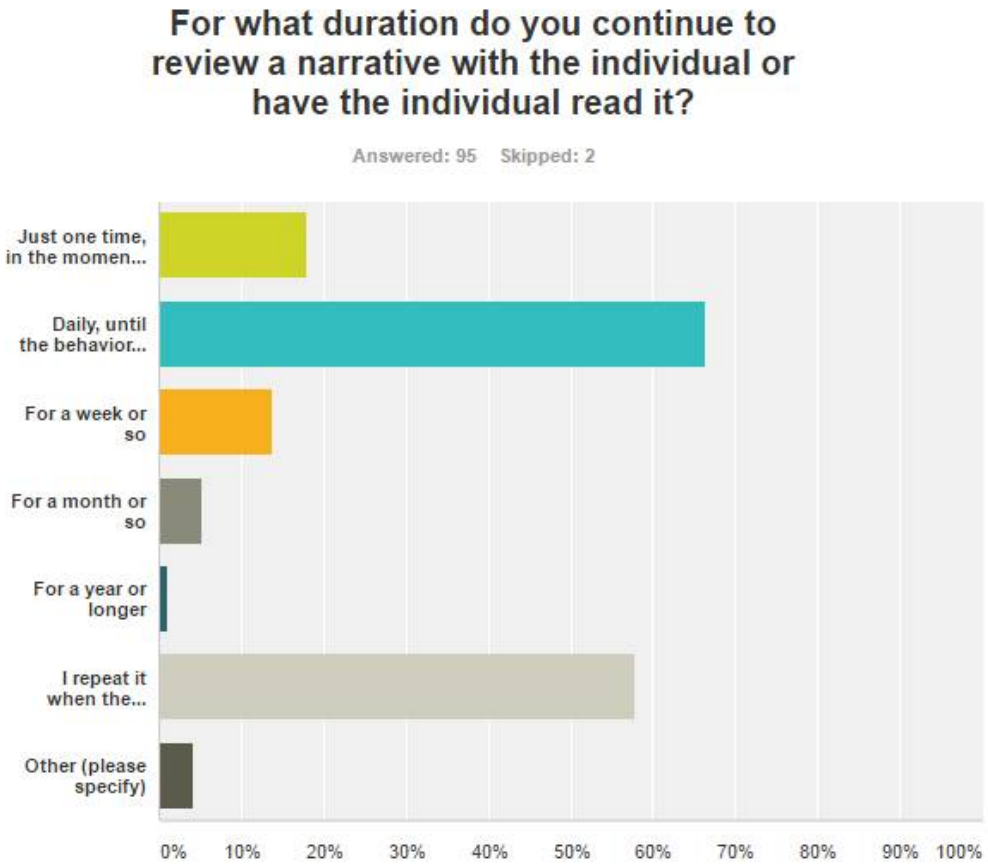

Table 10.2

Answer Choices		Responses	
Just one time, in the moment as I need it		17.89%	17
Daily, until the behavior improves or the situation is past		66.32%	63
For a week or so		13.68%	13
For a month or so		5.26%	5
For a year or longer		1.05%	1
I repeat it when the behavior or situation occurs again		57.89%	55
Other (please specify)	Responses	4.21%	4
Total Respondents: 95			

Implementation Duration (Educators). When educators were asked what duration do they continue to review narratives with the individual or have the individual read it, 17.89% chose just one time, in the moment as I need it, 66.32% chose daily until the behavior improves or the situation is past, 13.68% chose for a week or so, 5.26% chose for a month or so, 1.05% chose for a year or longer, and 57.89% chose I repeat it when the behavior or situation occurs again (see *Figure 10.2* and *Table 10.2* above).

Figure 10.3

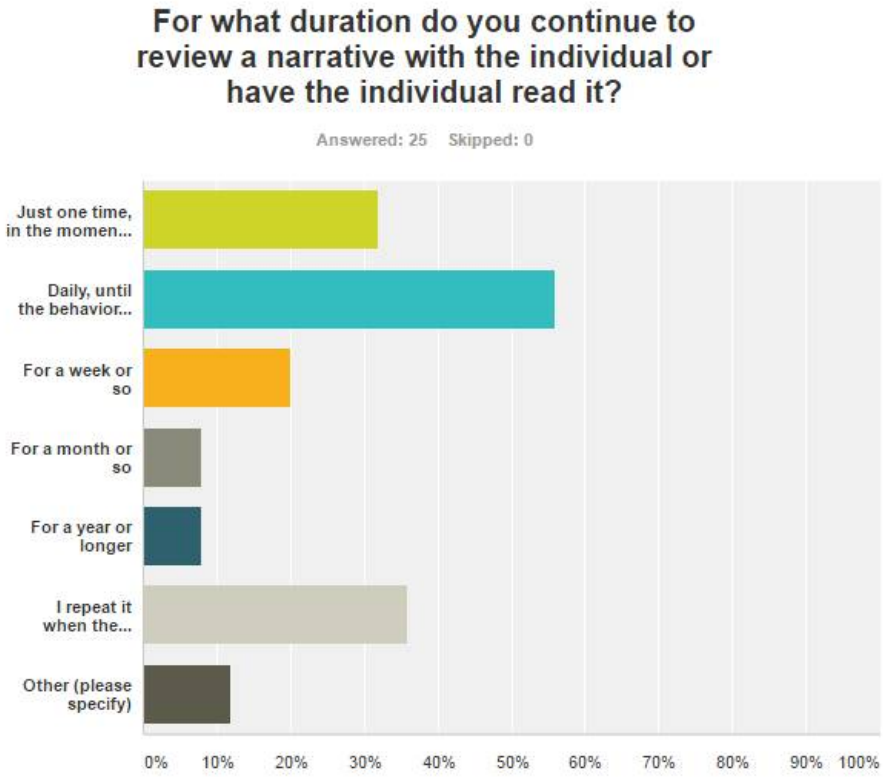

Table 10.3

Answer Choices	Responses	
Just one time, in the moment as I need it	32.00%	8
Daily, until the behavior improves or the situation is past	56.00%	14
For a week or so	20.00%	5
For a month or so	8.00%	2
For a year or longer	8.00%	2
I repeat it when the behavior or situation occurs again	36.00%	9
Other (please specify) Responses	12.00%	3
Total Respondents: 25		

Implementation Duration (Caregivers). When asked what duration do caregivers continue to review narratives, 32% chose just one time, in the moment as I need it, 56% chose daily until the behavior improves or the situation is past, 20% chose for a week or so, 8% chose for a month or so, 8% chose for a year or longer, and 36%

chose I repeat it when the behavior or situation occurs again (see *Figure 10.3* and *Table 10.3* above).

Implementation Duration (Differences). When respondents were asked about what duration they continue to review narratives with the individual or have the individual read it, 8% of caregivers chose a year or longer, while only 1.05% of educators chose a year or longer. This is a significant difference between groups with a Pearson Probability Chi-square value of 0.0059 with a value less than 0.05 being considered significant.

Figure 10.1

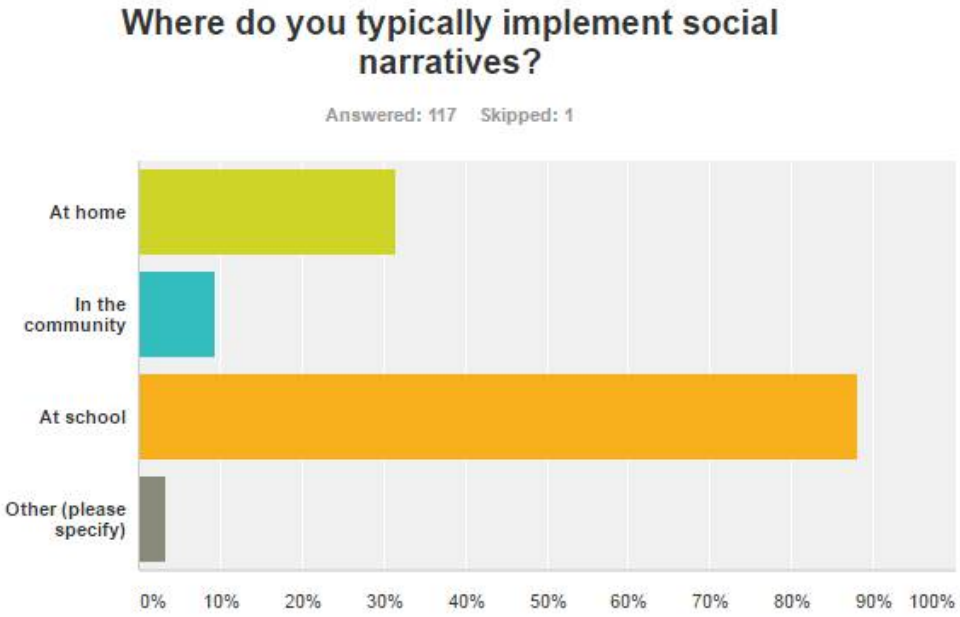

Table 11.1

Answer Choices		Responses	
At home		31.62%	37
In the community		9.40%	11
At school		88.03%	103
Other (please specify)	Responses	3.42%	4
Total Respondents: 117			

Implementation Setting (Combined). When asked where respondents typically implement social narratives, 31.62% chose at home, 9.4% chose in the community, and 88.03% chose at school (see *Figure 11.1* and *Table 11.1* above).

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Figure 11.2

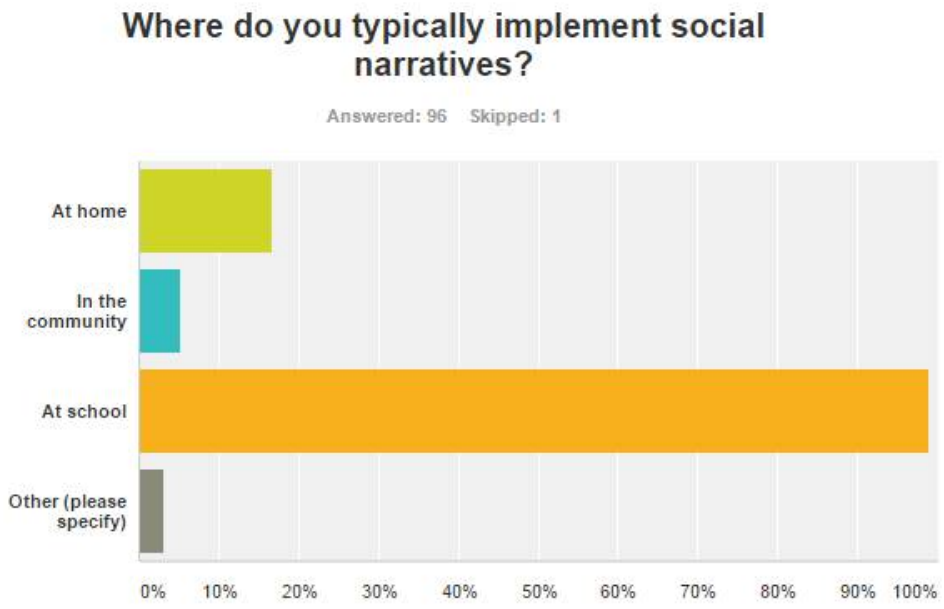

Table 11.2

Answer Choices		Responses	
At home		16.67%	16
In the community		5.21%	5
At school		98.96%	95
Other (please specify)	Responses	3.13%	3
Total Respondents: 96			

Implementation Setting (Educators). When asked where educators typically implement social narratives, 16.67% of educators chose at home. 5.21% chose in the community, 98.96% chose at school (see *Figure 11.1* and *Table 11.2* above). One educator responded that he/she often sends copies of the social narratives home for parents to implement, but there isn't any clear indication of follow-through in the home environment. Another educator, who indicated that their role is an occupational therapist, responded that social narratives should be shared with caregivers and implemented across settings.

Figure 11.3

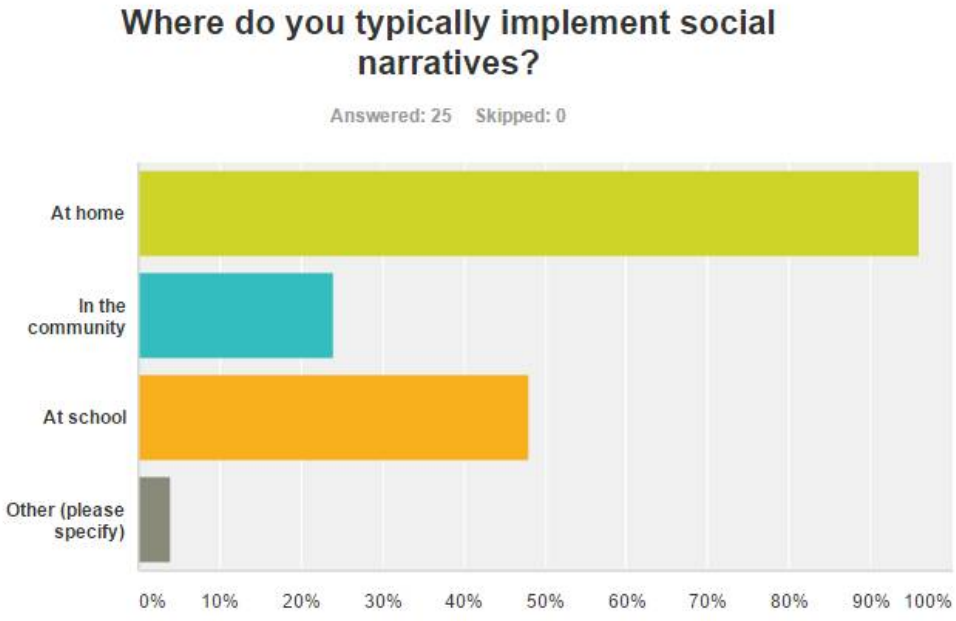

Table 11.3

Answer Choices		Responses	
At home		96.00%	24
In the community		24.00%	6
At school		48.00%	12
Other (please specify)	Responses	4.00%	1
Total Respondents: 25			

Implementation Setting (Caregivers). When asked where respondents typically implement social narratives, respondents 96% chose at home, 24% chose in the community, and 48% chose at school (see *Figure 11.3* and *Table 11.3* above).

Implementation Setting (Differences). When asked where respondents typically implement social narratives, significant differences were reported, which is expected given the respondents' roles. Of caregivers, 96% reported that they use social narratives home versus 16.67% of educators. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.0001 with a value less than 0.05 being considered significant.

While 98.96 of educators chose at school, only 48% of caregivers chose at school with a Pearson Probability Chi-square value of 0.0001 with a value less than 0.05 being considered significant. Of caregivers, 24% choose to implement narratives in the community versus 5.21% of educators with a Pearson Probability Chi-square of 0.0045 with a value less than 0.05 being considered significant.

Figure 11.1

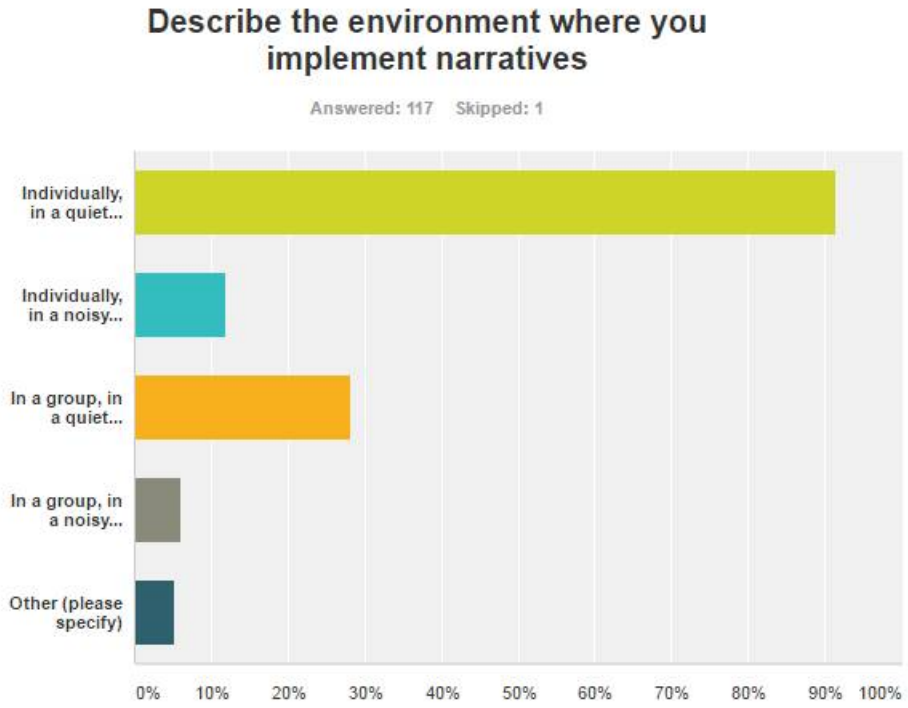

Table 12.1

Answer Choices		Responses	
Individually, in a quiet environment		91.45%	107
Individually, in a noisy environment		11.97%	14
In a group, in a quiet environment		28.21%	33
In a group, in a noisy environment		5.98%	7
Other (please specify)	Responses	5.13%	6
Total Respondents: 117			

Implementation Environment (Combined). When asked to describe the environment where respondents implement narratives, 91.45% respondents chose individually, in a quiet environment, 11.97% chose individually, in a noisy environment, 28.21% chose in a group, in a quiet environment, and 5.98% chose in a group, and in a noisy environment (see *Figure 12.1* and *Table 12.1* above).

Figure 12.2

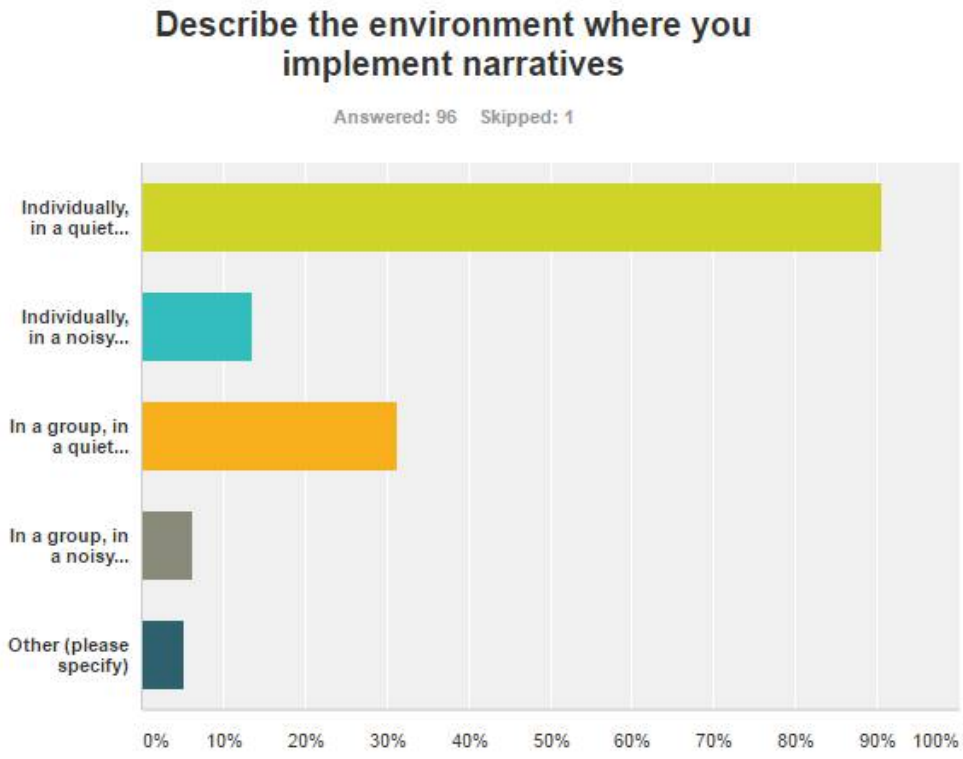

Table 12.2

Answer Choices		Responses	
Individually, in a quiet environment		90.63%	87
Individually, in a noisy environment		13.54%	13
In a group, in a quiet environment		31.25%	30
In a group, in a noisy environment		6.25%	6
Other (please specify)	Responses	5.21%	5
Total Respondents: 96			

Implementation Environment (Educators). When asked to describe the environment where respondents implement narratives, 90.63% respondents chose individually, in a quiet environment, 13.54% chose individually, in a noisy environment. 31.25% chose in a group, in a quiet environment, and 6.25% chose in a group, and in a noisy environment (see *Figure 12.2* and *Table 12.2* above).

Figure 12.3

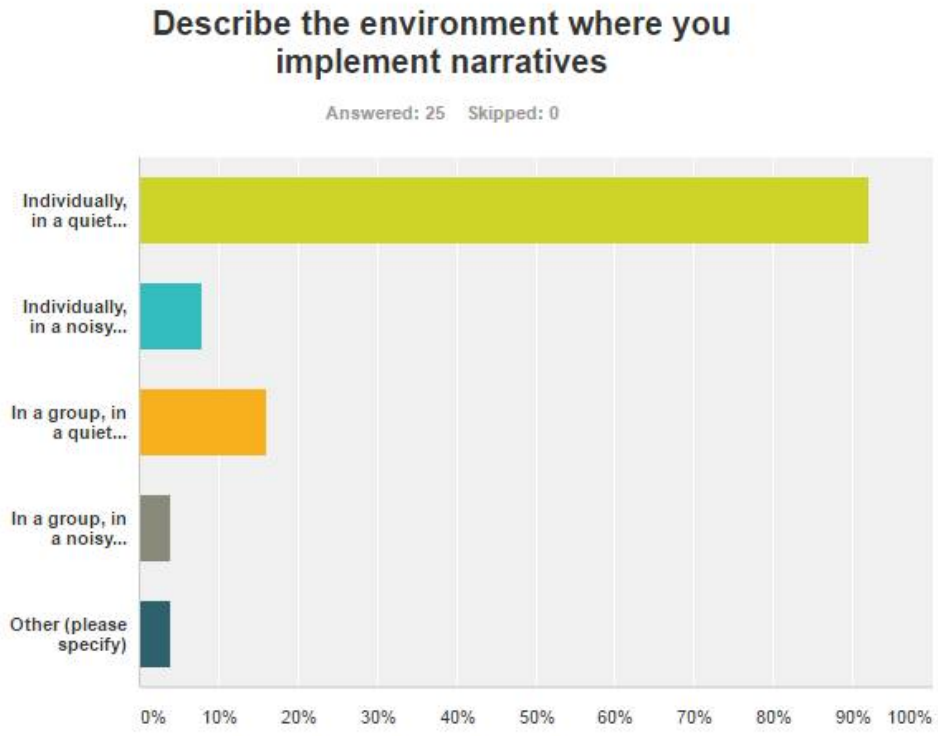

Table 12.3

Answer Choices		Responses	
Individually, in a quiet environment		92.00%	23
Individually, in a noisy environment		8.00%	2
In a group, in a quiet environment		16.00%	4
In a group, in a noisy environment		4.00%	1
Other (please specify)	Responses	4.00%	1
Total Respondents: 25			

Implementation Environment (Caregivers). When asked to describe the environment where respondents implement narratives, 92% of caregivers chose individually, in a quiet environment, 8% chose individually, in a noisy environment, 16% chose in a group, in a quiet environment, and 4% chose in a group, and in a noisy environment (see *Figure 12.3* and *Table 12.3* above).

Implementation Environment (Differences). No significant differences were reported between groups, when respondents were asked to describe the environment where they choose to implement narratives,

Figure 12.1

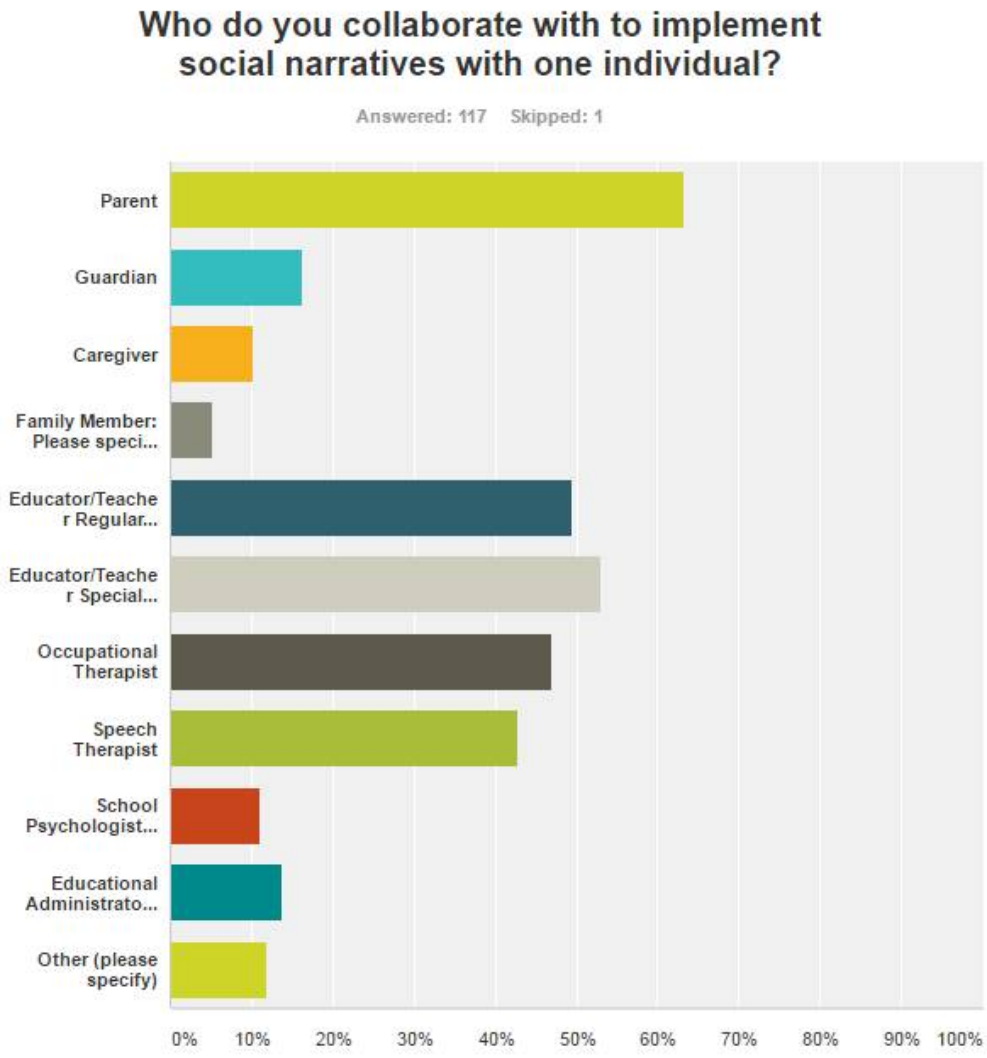

Table 13.1

Answer Choices		Responses	
Parent		63.25%	74
Guardian		16.24%	19
Caregiver		10.26%	12
Family Member: Please specify relationship		5.13%	6
Educator/Teacher Regular Education		49.57%	58
Educator/Teacher Special Education		52.99%	62
Occupational Therapist		47.01%	55
Speech Therapist		42.74%	50
School Psychologist/Counselor		11.11%	13
Educational Administrator/Supervisor		13.68%	16
Other (please specify)	Responses	11.97%	14
Total Respondents: 117			

Implementation Collaborators (Combined). When asked who respondents collaborate with, in order to implement social narratives with one individual, 63.25% chose parent, 16.24 % chose guardians, 10.26% chose caregivers, 5.13% chose family member, 49.57% chose educator/teacher regular education, 52.99% chose educator/teacher special education, 47.01% chose occupational therapist, 42.74% chose speech therapist, 11.11% chose school psychologist/counselor, and 13.69% chose educational administrator/supervisor (see *Figure 13.1* and *Table 13.1* above).

Figure 13.2

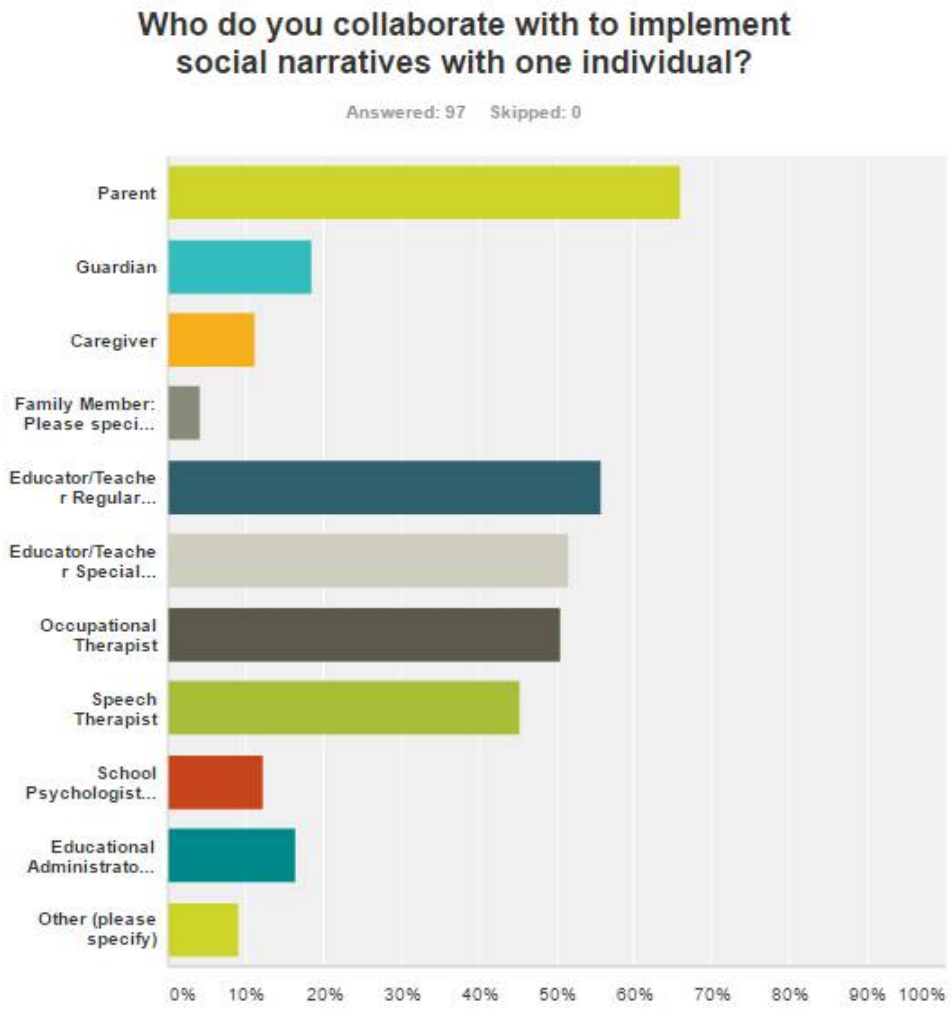
Who do you collaborate with to implement social narratives with one individual?
Answered: 97 Skipped: 0
Parent
Guardian
Caregiver
Family Member: Please speci...
Educator/Teacher Regular...
Educator/Teacher Special...
Occupational Therapist
Speech Therapist
School Psychologist...
Educational Administrato...
Other (please specify)
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Table 13.2

Answer Choices		Responses	
Parent		65.98%	64
Guardian		18.56%	18
Caregiver		11.34%	11
Family Member: Please specify relationship		4.12%	4
Educator/Teacher Regular Education		55.67%	54
Educator/Teacher Special Education		51.55%	50
Occupational Therapist		50.52%	49
Speech Therapist		45.36%	44
School Psychologist/Counselor		12.37%	12
Educational Administrator/Supervisor		16.49%	16
Other (please specify)	Responses	9.28%	9
Total Respondents: 97			

Implementation Collaborators (Educators). When asked who respondents collaborate with, in order to implement social narratives with one individual, 65.98% of educators chose parent, 18.56% chose guardian, 11.34% chose caregiver, 4.12% chose family member, 55.67% chose educator/teacher regular education, 51.55% chose educator/teacher special education, 50.52% chose occupational therapist, 45.36% chose speech therapist, 12.37% chose school psychologist/counselor, and 16.49% chose educational administrator/supervisor (see *Figure 13.2* and *Table 13.2* above).

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Figure 13.3

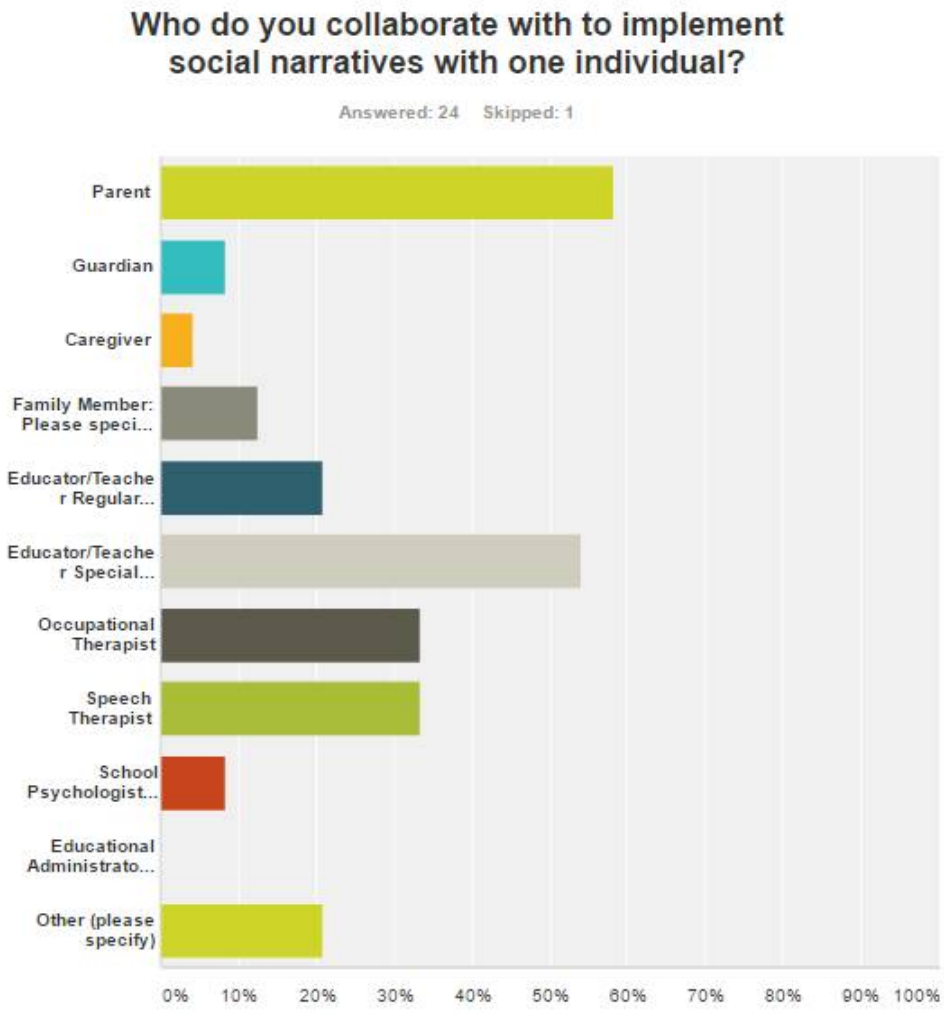
Who do you collaborate with to implement social narratives with one individual?
Answered: 24 Skipped: 1
Parent
Guardian
Caregiver
Family Member: Please speci...
Educator/Teacher Regular...
Educator/Teacher Special...
Occupational Therapist
Speech Therapist
School Psychologist...
Educational Administrato...
Other (please specify)
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Table 13.3

Answer Choices		Responses	
Parent		58.33%	14
Guardian		8.33%	2
Caregiver		4.17%	1
Family Member: Please specify relationship		12.50%	3
Educator/Teacher Regular Education		20.83%	5
Educator/Teacher Special Education		54.17%	13
Occupational Therapist		33.33%	8
Speech Therapist		33.33%	8
School Psychologist/Counselor		8.33%	2
Educational Administrator/Supervisor		0.00%	0
Other (please specify)	Responses	20.83%	5
Total Respondents: 24			

Implementation Collaborators (Caregivers). When asked who respondents collaborate with, in order to implement social narratives with one individual, 58.33% of caregivers chose parent, 8.33% chose guardian, 4.17% chose caregiver, 12.50% chose family member, 20.83% chose educator/teacher regular education, 54.17% chose educator/teacher special education, 33.33% chose occupational therapist, 33.33% chose speech therapist, 8.33% chose school psychologist/counselor, and 0% chose educational administrator/supervisor (see *Figure 13.3* and *Table 13.3* above).

Implementation Collaborators (Differences). When asked who respondents collaborate with, in order to implement social narratives with one individual, 55.67% of educators reported that they collaborate with other regular education teachers, versus 20.83% of caregivers who chose educator/teacher regular education. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.0010 with a value less than 0.05 being considered significant. Another significant difference between groups is that 16.49% of educators chose educational

administrator/supervisor, while 0% of caregivers chose educational administrator/supervisor. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.0257 with a value less than 0.05 being considered significant.

Figure 13.1

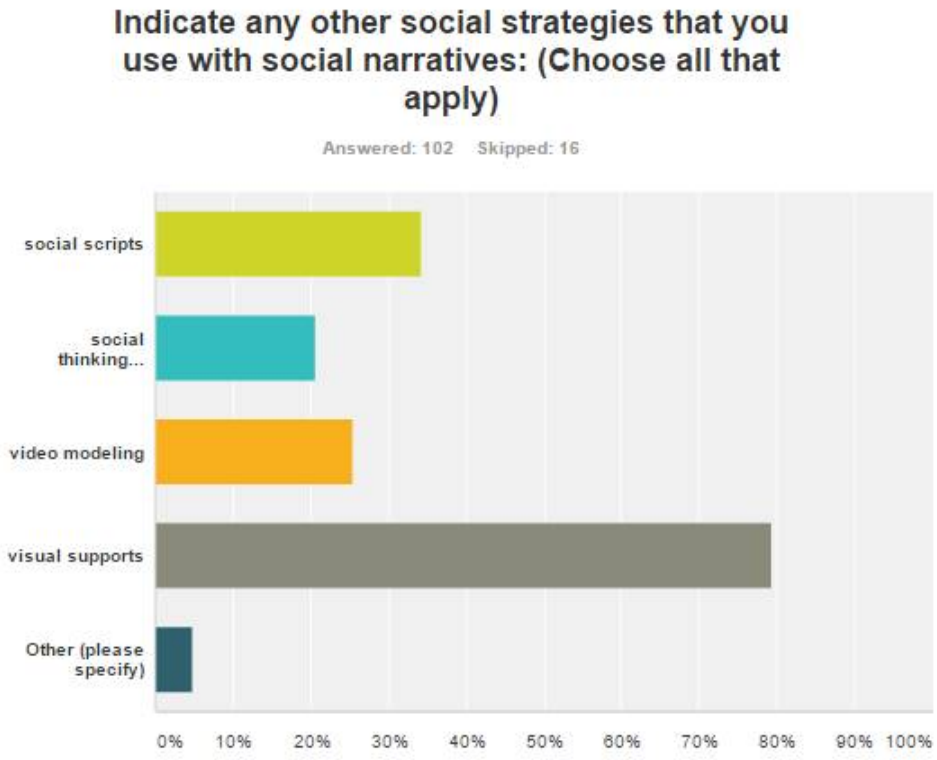

Table 14.1

Answer Choices		Responses	
social scripts		34.31%	35
social thinking curriculum		20.59%	21
video modeling		25.49%	26
visual supports		79.41%	81
Other (please specify)	Responses	4.90%	5
Total Respondents: 102			

Social Strategies Used (Combined). When respondents were asked what other social strategies they use with social narratives, 34.31% chose social scripts, 20.59% chose social thinking curriculum, 25.49% chose video modeling, and 79.41% chose visual supports (see *Figure 14.1* and *Table 14.1* above).

Figure 14.2

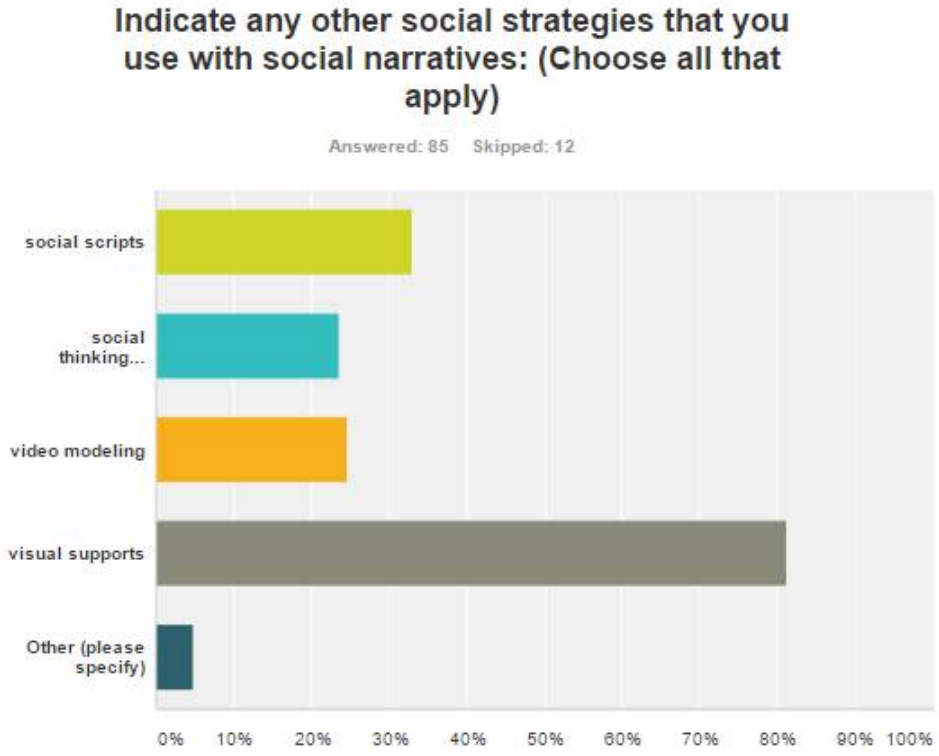

Table 14.2

Answer Choices		Responses	
social scripts		32.94%	28
social thinking curriculum		23.53%	20
video modeling		24.71%	21
visual supports		81.18%	69
Other (please specify)	Responses	4.71%	4
Total Respondents: 85			

Social Strategies Used (Educators). When educators were asked what other social strategies they use with social narratives, 32.94% chose social scripts, 23.53% chose social thinking curriculum, 24.71% chose video modeling, and 81.18% chose visual supports (see *Figure 14.2* and *Table 14.2* above).

Figure 14.3

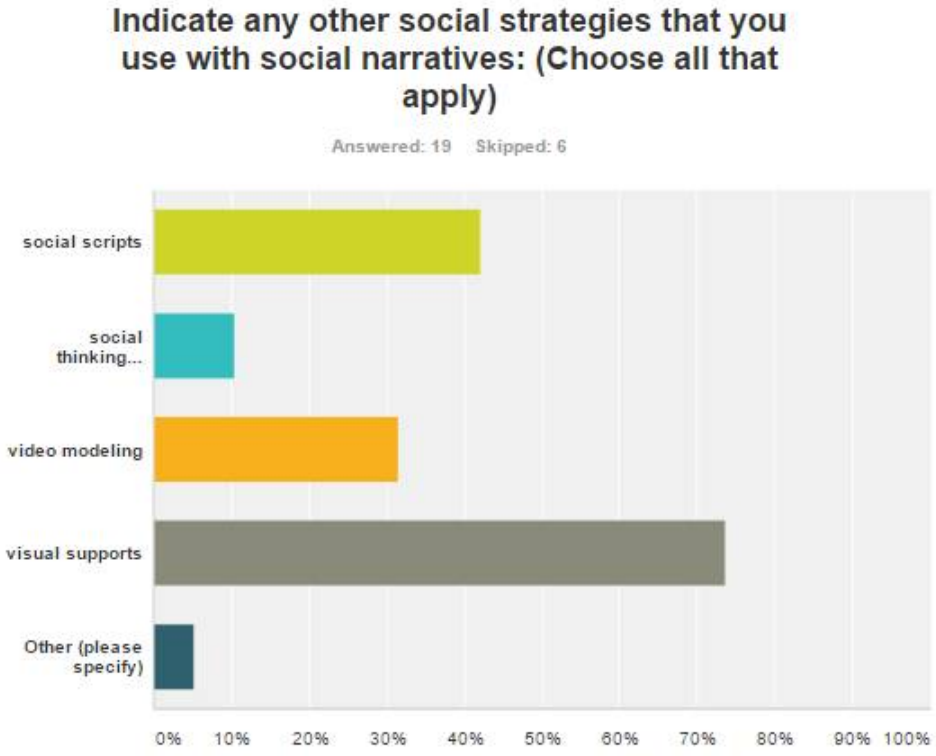

Table 14.3

Answer Choices		Responses	
social scripts		42.11%	8
social thinking curriculum		10.53%	2
video modeling		31.58%	6
visual supports		73.68%	14
Other (please specify)	Responses	5.26%	1
Total Respondents: 19			

Social Strategies Used (Caregivers). When caregivers were asked what other social strategies they use with social narratives, 42.11% responded with social scripts, 10.53% chose social thinking curriculum, 31.58% chose video modeling, and 73.68% chose visual supports (see *Figure 14.3* and *Table 14.3* above).

Social Strategies Used (Differences). When asked what other social strategies respondents use with social narratives, there were no significantly different responses between groups.

Discussion

Based on research literature, social narratives are considered to be effective in reducing problematic behaviors, improving expected behaviors, and preparing for change (Chan & O'Reilly, 2008; Delano & Snell, 2006; Barry & Burlew, 2004; Ivey, Heflin, & Alberto, 2004; Lorimer, Simpson, Myles, & Ganz, 2002; Kuttler, Myles, & Carson, 1998; NPDC, 2016). Despite this evidence, this research found differences between the perceptions of caregivers and educators in the effectiveness of narratives.

While both educators and caregivers shared a perception that social narratives are effective. Less than ten percent of all respondents disagreed with the perception that social narratives are effective. Only one respondent (<1%) strongly disagreed regarding the effectiveness of social narratives, but this respondent based his or her perception on a single experience attempting to use social narratives with an individual that refused to participate in the intervention. The level of training available to this respondent is not known.

Educators and caregivers within the research studies, reviewed and cited numerous times above, implemented social narratives in a prescribed manner to a set number of subjects to improve a very specific behavior, such as a student raising his hand before answering questions in class, in order to reduce disruptive talking out in class. In the natural context, the implementation process and strategy may differ in that behaviors may vary and other variables may exist. Without the expectation of clear cut results and outcomes in a case study, educators and caregivers may only implement as needed, for limited duration, or with limited fidelity. They may also abandon a strategy that could be effective due to the other variables and factors, such as limited time or support.

Differences in implementation of social narratives exist in the natural environment, just as Schneider & Goldstein (2010) recognized when reviewing research literature. As they established, one cannot separate the content or context of the implementation of social narratives when addressing behavior (Schneider & Goldstein, 2010).

The results of this research prompted more questions than answers. While the results offer professionals and caregivers information regarding the perceptions of caregivers and educators in the implementation of social narratives that has not previously been reviewed in research literature, these perceptions casted doubt on the effectiveness of strategies considered best practices for autism spectrum disorders. The effectiveness of a strategy, such as social narratives, is moot if training and experience with that strategy is not available to those who would benefit from using it. To effectively implement social narratives and other social strategies, the results of this study indicate that training and opportunities for collaboration between educators and caregivers may improve perceptions and implementation. Opportunities for training and collaboration may, thereby, improve implementation and the effectiveness of social narratives.

Perceived Effectiveness

Perceived Effectiveness of Social Narratives in Reducing Problematic Behaviors/Improving Expected Behaviors. Caregivers surveyed did not perceive social narratives as effective in reducing problematic behaviors. Although, both educators and caregivers reported strongly agreeing or agreeing in their perception of the effectiveness of social narratives, a higher percentage of caregivers (13.64%) than educators (8.6%) disagree with the effectiveness of social narratives to reduce problematic behaviors.

This perceived difference leads this research to further question whether the effectiveness of social narratives in reducing problematic behaviors in the home environment has thoroughly been researched or whether differences in caregivers' perceptions indicates a difference in implementation of social narratives. Does this suggest poor understanding of the implementation of social narratives or does this suggest weak ecological validity of previous research? Are narratives as effective when implemented in the home and community by caregivers? If not, is fidelity of implementation in the home environment an issue affecting outcomes?

Perceived Effectiveness of Social Narratives in Preparing for Change in Routine. In addition, educators perceive that social narratives are more effective at preparing for a change in routine, with only 1% of educators disagreeing with effectiveness, compared to 12.5% of caregivers. This was the only significantly different response about perceived effectiveness between educators and caregivers with a Pearson Probability Chi-square value of 0.0277, with a value less than 0.05 being considered significant. This difference in perception could possibly indicate a difference in fidelity or consistency in implementing narratives prior to changes in routine in the home environment, versus more predictable and consistent changes at school (i.e. school breaks or substitute teachers). Further research is warranted to determine differences in fidelity of implementation between environments prior to changes in routine.

Differences in Perception of Implementation

Environment. Educators and caregivers differ in their perception of the implementation of social narratives and in how they implement social narratives with individuals with autism spectrum disorder. As far as differences in implementation,

obvious and predictable differences exist, such as that caregivers implement narratives more at home and in the community and educators implement narratives more at school. It is noteworthy that 48% of caregivers chose the option “at school”, despite that the narratives are reviewed at home. Perhaps caregivers consider themselves a part of the educational team, include themselves in the process of implementation at school, or perhaps they consider narratives written about school to be implemented in the school environment. This difference is curious, but the reason for this perception is unknown and should be explored in further research.

Collaborators. Other obvious and predictable differences in implementation are that educators choose to collaborate more with other educators and with administrators than parents did. This is likely because educators have daily access to other educators and administrators, unlike caregivers. Another obvious difference is that caregivers are more likely to implement narratives for longer than a year. This is likely because caregivers are typically present over most of an individual’s lifespan, while educators typically work with or are involved with an individual for one (school) year at a time.

This difference in collaboration may suggest the need for more educational and collaborative opportunities between caregivers and families when implementing social narratives and other social strategies, This collaboration between educators and caregivers, or a client-centered and family-centered approach, would require that implementation of social narratives occur meaningfully within the context of individuals and their families and would include caregivers in the process (AOTA, 2014). This is significant because client-centered and family-centered interventions recognize the

importance of prioritizing outcomes that are meaningful to individuals and their families, across contexts.

Media. Another predictable difference was in the media or format chosen. Educators chose software and typed stories with actual photos more than caregivers. Because of the availability of technology in today's society, a lack of access may not account for this difference. Historically, software has been expensive to purchase and more readily available to educators, however this is no longer the case either. The difference between choices in media may indicate a need for further training to expose caregivers to technology and the creation of social narratives at home and in the community.

Timing. Another significant difference was when respondents choose to implement social narratives. The options of implementing "after a problem" compared to "change a behavior before there was a problem" were significantly different between groups. Of educators, 59.38% chose the option after there is a problem, while only 32% of caregivers chose the option after there is a problem. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.00157 with a value less than 0.05 being considered significant. Of educators, 75% chose the option "when I want to change a behavior," compared to 52% of caregivers. This was a significantly different response between groups with a Pearson Probability Chi-square value of 0.00324 with a value less than 0.05 being considered significant. More educators reported to choose to implement social narratives after problematic behaviors or issues than caregivers. Perhaps this is due to the differences reported above in perceived effectiveness at reducing problematic behaviors. Or, it may be in part, due to the

differences in options and acceptable means for educators versus caregivers in disciplining or correcting behaviors.

The significance of these findings, in light of social narrative effectiveness research, is to recognize that differences do exist in the caregiver and educators' perceptions of social narratives and how social narratives are implemented. Caregivers perceive social narratives as less effective when dealing with a problem behavior and when preparing for a change in routine than educators. This may indicate a need for more education and training for caregivers to effectively implement social narratives when preparing for changes in routine and reducing problematic behaviors.

Upon these findings, it becomes apparent that the literature reviewed that established social narratives as effective, typically involve implementation of social narratives in an educational or clinical environment (Chan & O'Reilly, 2008; Delano & Snell, 2006; Barry & Burlew, 2004; Ivey, Heflin, & Alberto, 2004; Lorimer, Simpson, Myles, & Ganz, 2002; Kuttler, Myles, & Carson, 1998; NPDC, 2016). Are these findings due to the fact that the educational and clinical environments offer more opportunity for training and collaboration? Additional research into the effectiveness of social narratives when used in the home or community is warranted.

Limits to this survey methodology include that the information gained from the surveys are not generalizable to the larger population. Local or regional differences, experiences, and relationships could affect perceptions. Perceived effectiveness cannot indicate that strategies are quantitatively effective. Additionally, it is likely that those responding to the survey are comfortable answering questions about social narratives and autism, due to experience and knowledge about the subject and those less comfortable

with this survey may not have responded. Those less familiar with the strategy may not have been well represented in the participants. Additionally, educators and caregivers who did not respond may have been those facing the most significant challenges in their home and school environments and may not have had the luxury of time to complete the survey.

Conclusion

Although research indicates that social narratives are an effective social strategy or practice when used with individuals with autism spectrum disorder, this research survey indicates that there are significant differences in how caregivers and educators perceive effectiveness of implementation and in how they implement narratives (Chan & O'Reilly, 2008; Delano & Snell, 2006; Barry & Burlew, 2004; Ivey, Heflin, & Alberto, 2004; Lorimer, Simpson, Myles, & Ganz, 2002; Kuttler, Myles, & Carson, 1998; NPDC, 2016). These differences in perceived effectiveness may be due to a lack of experience or training with social narratives, but may also be due to other factors. The potential impact of these findings indicates the need for further research into the implementation of social narratives in the home and community and the need for collaboration between caregivers and educators in preparing individuals with autism spectrum disorder to actively contribute and engage in their society and to pursue meaning in their daily occupations (Case-Smith & Arbesman, 2008).

When considering social narratives and other practices that are considered to be evidence-based or best practices in autism spectrum disorders, this research raises questions and careful consideration of whether the effectiveness of these practices has been established across contexts or whether previous literature has ecological validity. While research isolates variables and targets specific behaviors, the context of an individual’s educational and home environment requires consideration of other factors that can impact outcomes. A lack of ecological validity may result in differences between what is accepted in literature and what is seen in the natural context.

To what extent can the claims of effectiveness be generalized to the natural environments and contexts of individuals with autism spectrum disorder? And, if the practices and strategies are effective, they must be perceived as being so in order to be chosen. If educators and caregivers do not perceive interventions or strategies as being effective or are unaware of effective strategies, due to a lack of training or collaboration, they may not select the strategies necessary to improve an individual's ability to benefit from their educational programming and to participate fully in their daily lives.

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Curriculum Vitae

Kristi Ann Jordan

Education

Master of Science in Health Sciences

Bachelor of Science in Occupational Therapy

Sensory Integration Certified

Professional Profile

An educational consultant and occupational therapist in Indiana and previously an educational consultant and research associate at the Indiana Institute on Disability and Community at Indiana University, Bloomington. Has worked as an occupational therapist and autism consultant in education in Indiana, Illinois, and California.

Experienced with provided training, consultation, and therapy services throughout schools and communities to improve the lives of those affected by autism and other disabilities. Has provided therapy evaluation & treatment in a variety of settings, including inpatient and outpatient pediatrics, school-based therapy, sensory clinics, skilled-nursing facilities, and rehabilitation centers to individuals across the lifespan.

Experienced presenter, who has provided training and consultation on sensory integration, autism spectrum disorders, handwriting, fine motor skills, visual supports, social narratives, social skills, and related topics to schools and community organizations.

Honors, and Certifications

Psy Chi Honor Society Member

Sensory Integration Certification

NBCOT Certification

Indiana Professional Development Agency Occupational Therapy License

IRCA Roundtable State Leader

Group Fitness Certification YMCA

PiYo Certification

Key Qualifications

Experienced in school based, inpatient, and outpatient therapy services

Experienced in assistive technology

Proficient with technology

Experienced in public speaking, training, and education

Training in autism spectrum disorders

Published co-author of Technology and the Treatment of Children with Autism Spectrum Disorders

Contributing author for Hidden Curriculum One-A-Day Calendar

Employment

2015-present Greater Clark County Schools Jeffersonville, IN

Autism Coordinator

Consultant for public and private school students educationally diagnosed with autism spectrum disorder

Presenter/Trainer for Educators and Parents

2013-2015 Indiana University, Institute on Disability and Community, Indiana Resource Center for Autism

Educational Consultant/Research Associate

Provided training and consultation in Indiana public schools

Public Speaker at national and state conferences (ASA, IOTA, NATTAP)

Author of online publications for IIDC/IRCA

2009-present Paragon/Trilogy Rehab Services Sellersburg, IN

Occupational Therapist PRN

2008-present YMCA of Southern Indiana, IN

Group Fitness Instructor: Cycling & Yoga

2011-2016 Kindred Rehabilitation Services Sellersburg, IN

Occupational Therapist PRN

2004-2013 Greater Clark County Schools Jeffersonville, IN

Autism Coordinator & Occupational Therapist

School-based Occupational Therapist

Consultant for public and private school students

Provided and received training in areas related to Autism Spectrum

Co-authored Autism Internet Module on Leisure Activities

Contributed to National Autism Workshop Presentations

Contributed training materials for Indiana Resource Center for Autism

2004-2012 Therapy Works New Albany, IN

Occupational Therapist PRN

Summer 2007 Minds-In-Motion New Albany, IN

Occupational Therapist

Provided intervention for sensory-based occupational therapy program

2003-2004 CareerStaff Unlimited San Diego, CA

Occupational Therapist

Contracted school-based occupational therapist

2002 - 2003 S.A.S.E.D. Naperville, IL

School Association for Special Education in DuPage County

Occupational Therapist

School-based occupational therapist

2000 - 2002 Ginger Creek Aurora, IL

Coordinator/Administrator & Special Projects Manager

2000 Hylond & Fransiscan Rehab Centers Merced, CA

Occupational Therapist PRN